APRIL 1990
ISSUE 19
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THE One

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AMIGA
PC

MAGAZINE OF THE YEAR

FOR 16-BIT GAMES

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ESCAPE FROM SINGE'S CASTLE
WITH READYSOFT

PINBALL WIZARDRY
WIN A PINTABLE THAT PACS A PUNCH

RAINBOW ISLANDS
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RELEASE DATE APRIL 14th 1990

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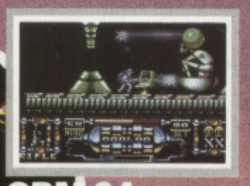

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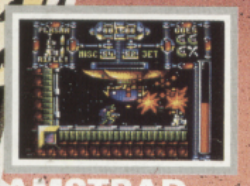

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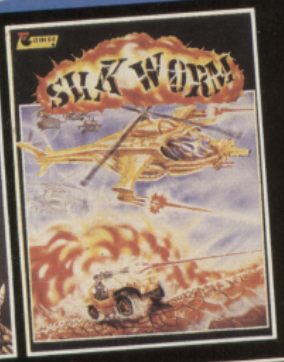

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Bullfrog's promising the best game ever, while UbiSoft and Mirrorsoft have plenty of treats in store. Not forgetting the three Top Tens, this month with a European flavour.

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What's out and about in April.

22 WORK IN PROGRESS
Delphine's Operation Stealth, Gremlin's Impossamole, System 3's Flimbo's Quest and the Bitmap Brothers' Speedball 2 are all prodded and poked by our probing proboscis.

39 REVIEWS
Readysoft's Escape From Single's Castle heads this month's star-studded line up, backed up by Incentive's Castle Master, Domark's Cyberball and Klax, Anco's Player Manager and EA's Ski Or Die. Who could ask for anything more?

45 TIPS
Everything needed to help you ascend the greased rungs of...

Fighter Bomber (Activision/Vektor Grafix)
Future Wars: Time Traveller (Palace/Delphine)
Interphase (Image Works)
The Ninja Warriors (Virgin/The Sales Curve)
Operation Thunderbolt (Ocean)
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57 PLAYERS GUIDE
The first colourful leg of a complete guided tour of the Rainbow Islands, courtesy of Graftgold, the team behind those exceptional conversions.

90 DEMOS
Phil South has been gorging himself in the Public Domain restaurant – and because he's such a nice bloke, he's brought you back a doggy-bag, filled to the brim with Ray-Traced romps and digitised doodlings. Better take them quick, as he's got warm grease running down his sleeves...

92 GRAFIX
It's that man again! Phil South puts things into perspective and talks to weird dreamer Herman Serrano about his.

94 ARCADES
Eugene Lacey's a swell guy, and this month he gets to grips with Taito's meaty chopper, drops acid in Aliens, and barely holds his lunch down playing with two sickeningly cute kids in T&J.

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Even on my favourite table, she can beat my best... Kati Hamza may not be a deaf, dumb or blind kid, but she knows her stuff when it comes to Pinball. Here's a complete history, including those computer versions.

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Another reminiscence romp with Gary Penn.

LETTERS

LETTERS, The One, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU.

GRAPPLING GRIPE

Dear The One
I am the owner of an Amiga and for months now I have been searching for a wrestling game, but with no luck. Please could you tell me if there are any wrestling games for the Amiga and if so could you tell me where to get them in the NorthEast?
Graeme King, Tyne & Wear

Funny you should mention it, but Hewson's releasing a Wrestling game this month – check out the Releases section for more details. Isn't life spooky?

ACORN ANTICS

Dear The One
I find 'The Eighties' article very interesting, however you made one mistake in Part Three. As well as owning an Amiga, I have three 8-bit machines, my first being an Acorn Electron so I was influenced on the Beeb scene all those years ago.

As I recall, it was Acornsoft who produced **Elite** and **Revs**. Virus was produced by Superior Software, but under the title **Zarch**. It was Firebird who CONVERTED these great titles to other formats.

It shows that great games don't start life on a Commodore 64 or even a Spectrum, but on a humble Acorn. It's a pity that 16-bit games rely on glamorous graphics and sound, with very little else. Yes, I realise that there are some worthy contributions to the world of 16-bit, but unfortunately it is a minority.

By the way, is there any chance of covering Elite II in Work In Progress?
S C Sharp, Brighton

Sure, Acornsoft produced Elite and Revs for the Beeb, but it's still true that Firebird also produced them for other formats. Just because they didn't do them first, that doesn't mean they don't warrant a mention. As for the Elite II Work In Progress – you could well be seeing something soon...

BOXED IN

Dear The One
Please could you answer the following:
1) Are there any good boxing games (not boxing manager ones) for the Amiga?
2) Will **Violence Fight** or **Final Blow** be converted to the Amiga? If so, when?
3) Would you recommend **TV Sports: Basketball**?
W Tunstall, Bournemouth

*As far as we know, there aren't any decent all-action boxing games on the Amiga as yet – but Cinemaware's forthcoming **TV Sports: Boxing** could well change all that. Neither Violence Fight nor Final Blow have been snapped up as yet, and on the Basketball front – it was worth 93% last month. Is that recommendation enough for you?*

NARKED WITH NARC

Dear The One
I am writing to you about an arcade game called **Narc**. I am wondering whether or not this has been converted onto the ST or Amiga. So could you please tell me if it has been covered, or if there are any plans for it to be converted.
Alex Beaton, Kincardineshire, Scotland

Williams' horizontally-scrolling shoot 'em up Narc is currently being converted to both the ST and Amiga by Ocean, and should be out later in the year. Good eh?

JOVIAL JAPES

Dear The One
Here are some jokes.
What did one computer say to the other computer?
Nothing – they weren't plugged in.
What's big and grey and can't climb trees?
A PC.
What's big, red and hairy?
A bus with its windows open.
Why did the computer fall out of the tree?
Because it was dead.
Why did the second computer fall out of the tree?
Because it thought it was a game.
Why did the Panda fall out of the tree?
Because it thought it was a computer.
Where does a two-ton PC sleep?
Anywhere it likes.
First Amiga: Morning, Mr Amiga.
Second Amiga: Blimey! I never knew Amigas could talk!
Gareth Hardy, Linconshire

Not bad, Gareth, but how about these little gems?

What's cream-coloured and wears check trousers?
Rupert the Amiga.
Waiter waiter, there's an FM Towns in my soup.
Don't shout, they'll all want one.
Knock knock
Who's there?
Amiga
Amiga who?
Amiga to meet you, so let me in.
What's grey and hard?
An ST with a flick-knife.
What does Jack Tramiel drink?
'S Tea.
Why did the sailor throw his Amiga overboard?
Because he thought it was the anchor.

FOOTY FROLICS

Dear The One
I have noticed that over the last few months there have been more and more soccer games appearing on the ST and Amiga. But what really sticks in my craw is that all of them are action-only games, with no managerial side and very little in the way of strategy.

In fact it's not only the current crop of soccer sims that have been devoid of strategy and management – for the life of me I can hardly think of any 'soccer boss' games on 16-bit at all, apart from **Football Manager 2 (ugh)**.

Why is it that there's such a lack of games of this type on 16-bit, when on 8-bit there are plenty of management games? Do you know of any up-and-coming soccer strategy games that I can look out for?
Dan Taylor, Rochdale

*You're right that there has been a definite shortage of soccer management games on 16-bit so far, but fortunately the situation looks like it could be improving. With the football season still in full swing and the World Cup just around the corner, the soccer games are coming thick and fast, and already two excellent management-based games have emerged – both of which are reviewed this issue. **Player Manager** offers plenty of hard-nosed technical accuracy and strategic complexity, while **Manchester United** goes for a slightly more straightforward approach. Check out pages 53 and 79 for the full low-down.*

BATMAN BOVVER

Dear The One
I have been reading your magazine for a few months, but unfortunately I missed the **Batman: The Movie** review for the Amiga. Please could you either send me the review or reprint it. If it is not possible to do this, then could you please just print the ratings.
Christopher Breed, Slough, Berks

Anything for a troubled soul, Christopher. CONGRATULATIONS!
YOU HAVE FOUND THE SECRET ROOM!

*Just correctly answer the following question to walk off with a copy of Rainbird's **Midwinter**.*

The aliens in the cult classic science fiction spoof Buckaroo Banzai Adventures Across The Eighth Dimension all shared a very unusual name. What was it?

A John
B Jellyman
C JzzXyyZ

Send your answer on a postcard or the back of a sealed envelope to: Secret Room, The One, 30-32 Farringdon Lane, London EC1R 3AU. First correct entry out of the magic hat wins.

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With outstanding visual effects, sinister sound and an infernal plot, this is one mystery you'll never forget. Surviving it is an achievement, solving it is the most challenging part of all.

Once you've stepped through the gates, there's no going back.

OUT SOON ON ATARI ST, AMIGA AND PC

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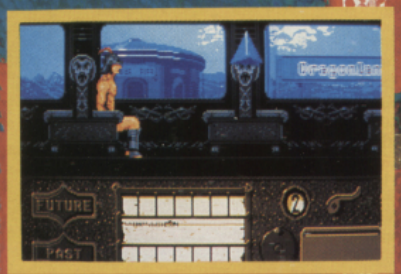

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THE BEST GA

BULLFROG Productions, the award-winning team behind the classic God simulator **Populous**, is currently working on what it describes as "the fastest, deepest, biggest and best game of all time." And if what's been developed to date is anything to go by, this is no idle boast.

Sporting the working title of **CyberAssault 556**, the game looks set to expand the world of 16-bit gaming, pushing the Amiga far further than it's ever gone before – and that's no exaggeration.

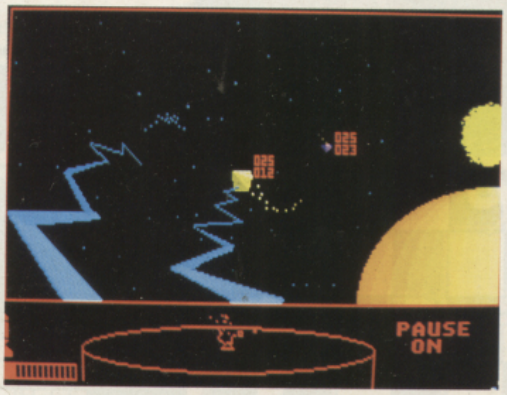
CyberAssault 556 has been in production for well over a year. It was at storyboard stage long before Populous was conceived, but it's only now that the team has chosen to reveal its potentially Earth-shattering project.

Set in the year 5409, the player is cast as the last member of a hyper-intelligent yet ruthless alien race that is none too happy to see thousands of other races expanding their empires throughout the Universe. The task you are set is to wipe out the entire universal population (!), so you can repopulate your species and assume absolute power. This is achieved by traveling between galaxies **Elite**–style and stirring up trouble between conflicting races to they declare war and wipe each other out.

But it's not quite as simple as that – each of the game's 50 BILLION (!) planets has a different culture, along with its own delicate political and economic balance, and this dictates both how they behave towards you and each other. As they progress through the ages they develop technology, become more advanced races, and the governmental and psychological situation changes accordingly. By swapping technology, goods, information and scientific knowledge between planets (which Bullfrog calls Culture Trading), it's possible to directly affect the advancement of a world – you can bring about terrorism and civil war, and subsequently turn them into warmongering races.

However, it becomes obvious that small-scale wars don't help much – with so many planets to obliterate the process could take years, so you must devise a battle plan. By subtly 'stirring the pot' it's possible to start wars that have economical and political 'knock-on' effects to other planets and so create chain reactions. The ultimate objective is to trigger one huge intergalactic apocalypse!

CyberAssault isn't just a complex strategy game – it's also a full-scale flight simulator! With hundreds of alien races on your tail (as well as the Galactic Police) for a multitude of reasons, combat is commonplace, both in deep space and above the heavily-populated cities on the planets' surfaces. As you wreak havok over this planet, cars travel along the roads, people mill about on the streets and there's even a working railway system complete with trains and stations! "Everything on every planet can be destroyed," enthuses Molyneux. "You can blow up cars, strafe people with laser fire, knock out the trains as they travel and even blow up the skyscrapers!" To watch this section in action, as you weave through the city's buildings at top speed and fly down onto the streets, is nothing short of mind-blowing.

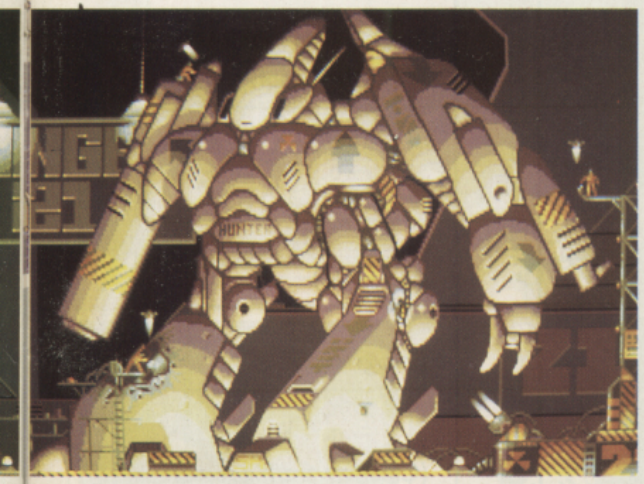


Peter Molyneux, co-designer of Populous and now the driving force behind CyberAssault 556, explains: "It's a little like **Carrier Command** or Elite in the sense that it's a combination of action and combat and complex strategy. But we believe we've created a game design which is much much more complex, with the diplomacy and technical trading aspects. We've got 50 billion independent planets interacting, trading, and fighting with each other, and you're caught in the middle. This isn't a game – it's a real Universe inside a computer!"

But while all of this may sound pretty astounding, it's CyberAssault 556's technical achievements that are most breathtaking. By taking time to dissect the Amiga's by-and-large unexplored hardware, the team's approaching it from a innovative programming angle and has managed to 'trick' the machine to perform at almost FIVE TIMES its normal processing speed.

"CyberAssault is entirely vector-graphics based," Peter elaborates. "The star-

ME EVER?



fields, alien space fleets, planetary surfaces, back holes, and space platforms are all line-drawn, filled and light-source shaded, giving a ray-traced feel. We took a long hard look at the Amiga's Copper and Blitter chips, and worked out ways in which we could put them to better use. Now we can use the two custom chips to boost the Amiga's processor power nearly five-fold!"

The results of Bullfrog's breakthrough is only too clear. CyberAssault can deal with over 400 MILLION vector computations at a time – allowing over 1,500 objects to be manipulated in real 3D space at any time, with no loss of speed or fluidity. And with over 64 colours on screen at a time (Bullfrog has devised a way of 'fooling' the Amiga into displaying more colours than it's actually got), it's nothing short of incredible. "We've yet to see anything – even a coin-op – that can manipulate filled vector graphics at this speed. **Hard Drivin'** in the arcades is probably the closest thing speed-wise to CyberAssault," Molyneux reveals. CyberAssault runs at 25 frames a second – the average update speed for graphics this detailed is usually nearer to one frame every two seconds!

And that's not all. Bullfrog has pioneered a new system of artificial intelligence which it has used to set up SimNet, a computerised network whereby all planets in the galaxy interact, and it's through this system that you communicate with worlds. "We've developed the most advanced artificial intelligence ever seen on home computer – you can actually converse with the leaders of different planets at length!"

All interaction with alien races is icon-controlled, and the conversations are all – get this – relayed through sampled speech! By storing samples as phonetics rather than complete sentences, its possible for the program to build words and phrases and make them flow realistically. It's a technique Cinemaware attempted to pioneer (see Work In Progress, Issue Nine) but discarded after many months of labour due to technical problems. But these are problems that Bullfrog seems to have ironed out, and the result is an exceptional, unnerving, almost human voice.

Combined with the artificial intelligence, talking to an alien in CyberAssualt is almost like having a conversation with a real person! And as an added boon, everybody you talk to is 'real'. "By using an Ultrasonic 3D Digitiser, which was loaned to us by Surrey University, we've texture-mapped a variety of real people's faces and converted them into vector graphics, so now we can make them talk perfectly in time with the speech and completely realistically. It's really weird. The faces look as if they're alive, as we can convey virtually any facial expression – fear, anger, contentment, sadness, embarrassment – we can hardly believe it ourselves!"

Work on CyberAssault is currently in full flow – but even so there's still plenty of programming and design work to be finalised, and so Bullfrog doesn't expect to have the project finished until next year – at the earliest! Electronic Arts has already set a tentative release date for March 1990 on Amiga only. But as Peter Molyneux adds: "You never know – we might yet coax something out of the ST and PC, too."

Meanwhile, Bullfrog's other two projects in progress (as exclusively revealed in The One in Issue 12) are nearing completion. You can expect to see Flood in the late Summer, but as for its incredible Super Populous-alike... well, work has almost come to a standstill with all enthusiasm being channeled into CyberAssault, so a late Autumn release is a more realistic prospect.

TOP TEN

(Month Ending March 1990)

AMIGA

1	(1)	FIGHTER BOMBER (Activision)
2	(2)	FUTURE WARS: TIME TRAVELLER (Delphine/Palace)
3	(NE)	RAINBOW ISLANDS (Ocean)
4	(5)	OPERATION THUNDERBOLT (Ocean)
5	(NE)	DRAKHEN (Infogrames)
6	(3)	KICK OFF EXTRA TIME (Anco)
7	(10)	GHOULS 'N' GHOSTS (US Gold)
8	(6)	KICK OFF (Anco)
9	(RE)	THE DUEL (Accolade)
10	(RE)	MANIAC MANSION (Lucasfilm/US Gold)

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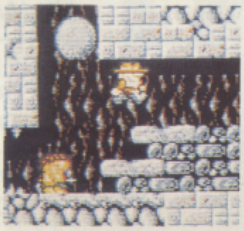
RICK NOT-QUITE-SO DANGEROUS

RICK Dangerous, adventurer extraordinaire and star of possibly the toughest platform game ever, has been cut down a peg or two. MicroProse has announced a new 'cheat' version of **Rick Dangerous** for anyone a bit miffed by the fact that the later levels were just too difficult to reach.



The tweaked Rick Dangerous allows you to choose which level you want to play. But beware! While making use of this facility to practice those unexplored levels, it must be noted that this has the same effect as using the cheat mode on the original version. So, unless you complete the game as you would do normally, you don't get to see the grand finale sequence at the end. Just for the record, helping hands for all four levels can be found in Issues 11, 12, 13 and 14 of The One.

The enhanced Rick goes on sale soon. But if you already have a copy of Rick and would like to upgrade, you can send your copy (disk only – not the packaging) to MicroProse and have it replaced for the paltry sum of £4.99. Call them on (0666) 504326 for more information.

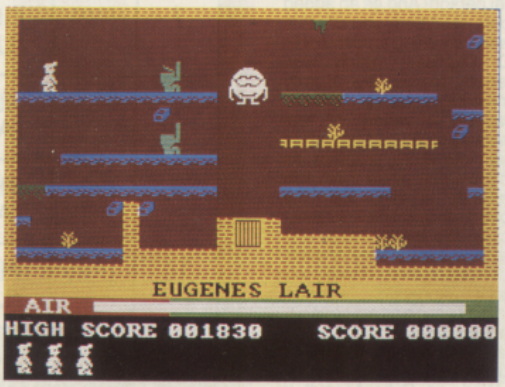
And if Rick Plus isn't enough for you, the author – Core Design – is still beavering away on **Rick Dangerous II** for a September release. This time our hero battles against the evil Fat Man in a Flash Gordon parody set in space.

JUST ANOTHER MANIC MINER-DAY?

HE'S BEEN in retirement for nearly eight years now, but one of the industry's best-loved cult characters is back – in the 16-bit conversions of the game that made him a megastar. The gold-hungry Miner Willy performance in that Spectrum platform game **Manic Miner** can now be witnessed on the ST and Amiga, courtesy of the original publishing house Software Projects.

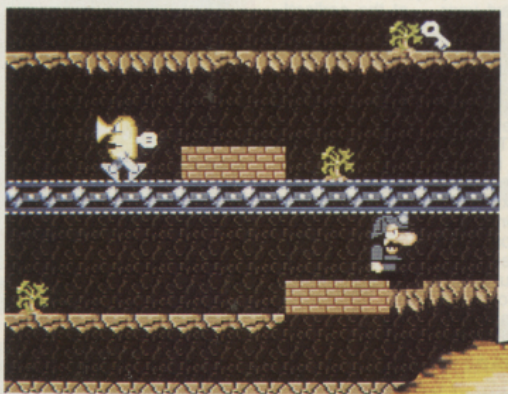
Matthew Smith's classic creation (which was reputedly based on the even older platform pioneer **Miner 2049er**) sees the tiny hero attempting to leap his way through 20 underground caverns, avoiding clockwork toys, solar mirrors and rampaging toilets.

Two interpretations of the classic game are included in the new 16-bit incarnations. For purists (and fans of Looks Familiar) there's a perfect copy of the original Spectrum version, complete with one-channel sound and colour-clash, and a contemporary version (called Manic Miner II) featuring 'enhanced' graphics and sampled speech, scrolling caverns and extra features such as bonus capsules. But of course there's no improving on the original game, and it's a sure-fire bet that it's the classic version that proves the most popular of the two. Manic Miner is in the shops now on ST and Amiga – and all for just £9.99.



Why, it takes you back, doesn't it. Eugene's Lair, just one of Manic Miner's 20 taxing caverns.

The 'contemporary' version may boast 16-bit aesthetics and new gameplay features, but it's not a patch on the original.



TOP TEN

(Month Ending March 1990)

ATARI ST

1	(NE)	PLAYER MANAGER (Anco)
2	(NE)	ULTIMA V (Origin/Mindscape)
3	(1)	CHAOS STRIKES BACK (FTL/Mirrorsoft)
4	(NE)	OPERATION THUNDERBOLT (Ocean)
5	(10)	GHOULS 'N' GHOSTS (US Gold)
6	(NE)	DRAKHEN (Infogrames)
7	(RE)	TV SPORTS: FOOTBALL (Cinemaware/Mirrorsoft)
8	(RE)	FALCON: THE MISSION DISKS – VOLUME ONE (Spectrum HoloByte/Mirrorsoft)
9	(NE)	RAINBOW ISLANDS (Ocean)
10	(RE)	HARD DRIVIN' (Tengen/Domark)

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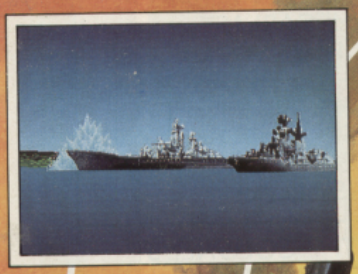
688 ATTACK SUB



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Screenshots represent IBM version, we think the Amiga version looks even better!

ELECTRONIC ARTS™

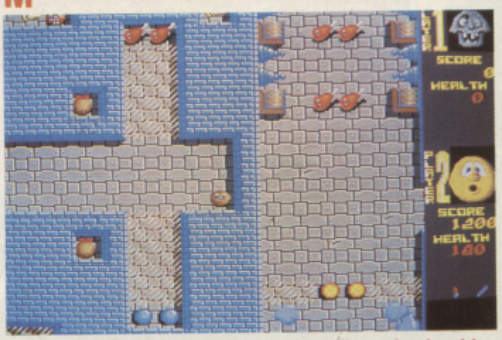
UBI-DOOBI-DOO!

FRENCH software publisher UbiSoft's got a pot pouri of wares imminent for release. The long-awaited Amiga conversion of the cult ST hit **Puffy's Saga** (reviewed in Issue Four) is here at last, with a multitude of new features making up for the long wait. Entitled **Super Puffy**, it features swish new presentation, enhanced sampled sound, new mazes and aliens, and a full-screen display.

In a more original vein, **BAT** promises to be like "nothing you have ever seen before". BAT (Bureau of Astral Troubleshooters) is an RPG-cum-adventure which sets the task of disposing of the evil interstellar dictator Vrangor. UbiSoft promises over 1,100 locations to visit as you jet around the galaxy, and these include underground cities, casinos, parks and seedy bars, as well as a host of alien characters to interact with. After 18 months in development, BAT should be released in May.

Following shortly after is **Unreal**, a multi-level mix of shoot 'em up and arcade adventure action. Cast as the musclebound hero Targan, you attempt to save a damsel in distress from the clutches of an evil wizard. Unreal is diverse to say the least – if you aren't navigating rivers on the back of a dragon, you chop up enemies with a mystic chainsaw!

Multi-level slashing and swiping in UbiSoft's Unreal.



Super Puffy. Everybody's favourite piece of bouncing dough is back on the Amiga – and he's in full effect.

Finally there's **Fred**, a no-nonsense arcade adventure, this time with a tongue-in-cheek feel. As the brave knight of the title, you undertake a mission to rescue your princess sweetheart from captivity. Battling through 50 locations, our Fred takes on over a hundred death-crazed creatures before finally reaching his loved one. And even then it's not over... Expect to see Fred released over the next couple of months on ST, Amiga and PC.

MINDSCAPE MAKES OUR DAY

TWO OF the cinema's favourite characters are soon to burst onto the 16-bit scene courtesy of Mindscape – and with a novel twist. The Sussex-based firm has the binary media licences to **Dirty Harry** and **Mad Max** – but unlike most other film tie-ins, Mindscape has the freedom to do almost whatever it wants with the characters. What looks most likely at the moment is a pair of games based around Harry and Max, both drawing on elements from the movies, as opposed to a straight film adaptations.

The two games are well under way at the moment, but neither is planned for release until the Autumn. And of course, there's a good chance of more Harry and Max games following after.

Continuing the cinematic vein, Mindscape has also just acquired the licence to the new Tom Cruise movie **Days Of Thunder**, in which the hunky screen idol plays a racing driver. The movie's released in the states on the fourth of July (seems appropriate!), and should hit these shores around September. Mindscape's hoping to get its adaptation out at the same time.

Two of the cinema's greatest law enforcers – Inspector Dirty Harry Callaghan and "Mad" Max Rockanstky – are both signed up for 16-bit duty with Mindscape.

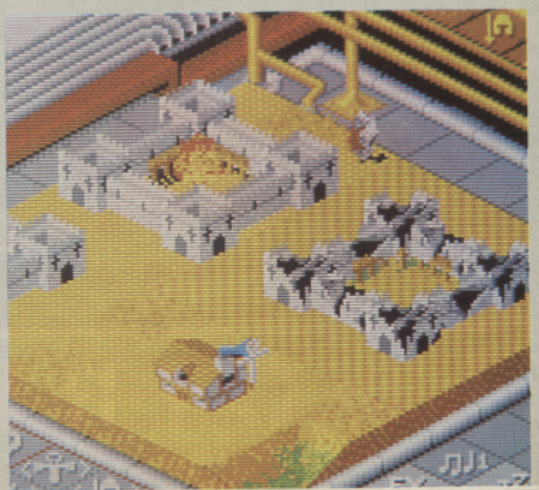
TOP TEN

(Month Ending March 1990)

IBM PC & COMPATIBLES

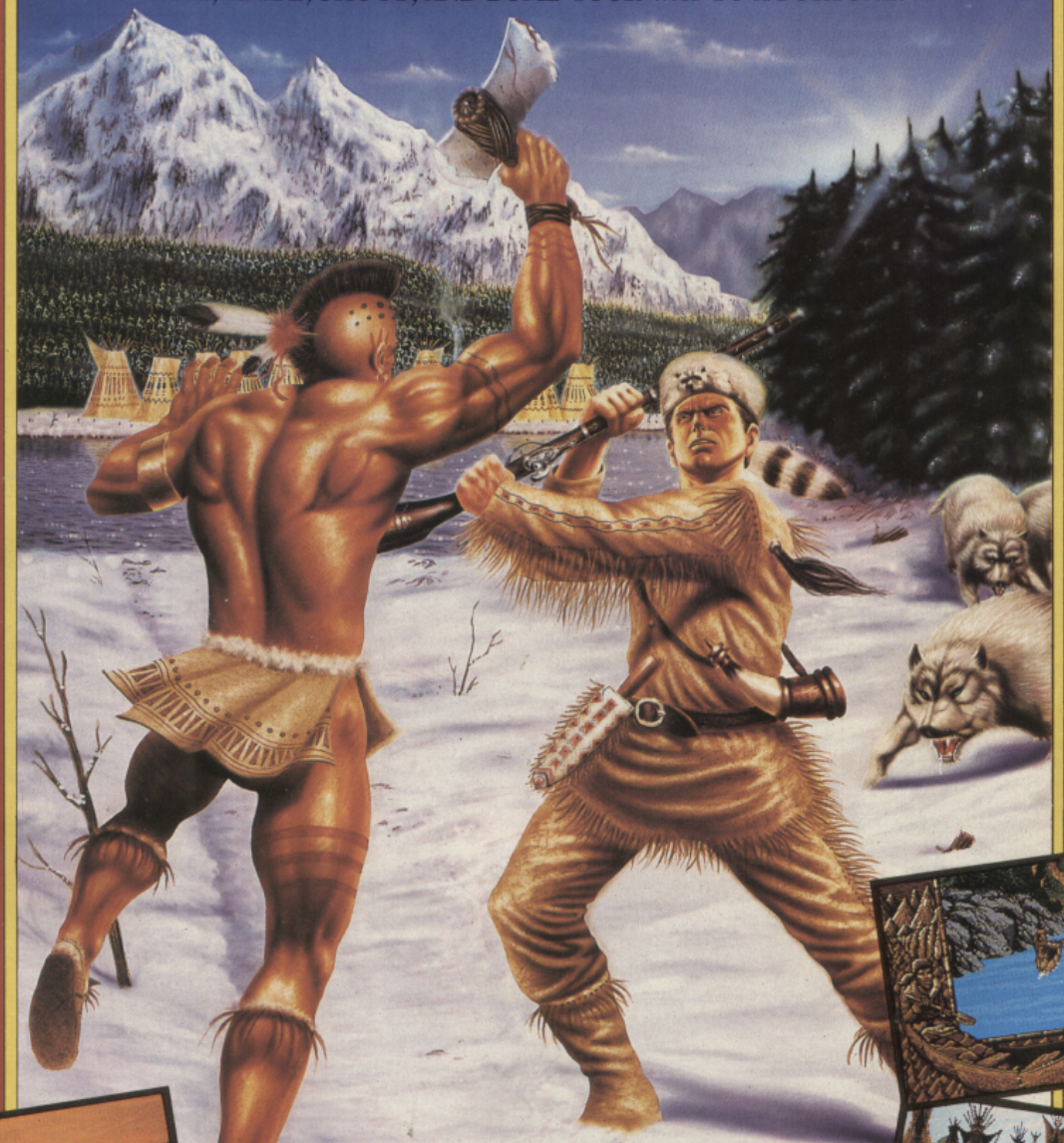
1	(2)	CHESSMASTER 2100 (Mindscape)
2	(1)	FLIGHT SIMULATION IV (SubLogic)
3	(5)	INDIANAPOLIS 500 (Electronic Arts)
4	(4)	688 ATTACK SUB (Electronic Arts)
5	(NE)	XENON 2: MEGABLAST (Image Works)
6	(NE)	FLIGHT SIMULATOR SCENERY DISK: WEST EUROPE (SubLogic)
7	(7)	THE COLONEL'S BEQUEST (Sierra/Activision)
8	(9)	KING'S QUEST TRIPLE PACK (Sierra/Activision)
9	(3)	POPULOUS (Electronic Arts)
10	(RE)	F-19 STEALTH FIGHTER (MicroProse)

Compiled exclusively for The One by Software Circus Ltd, The Plaza on Oxford Street, 120 Oxford Street, LONDON W1N 9DP. Tel: (01) 436 2811.



COLORADO

**100 SCREENS OF BEAUTIFULLY ILLUSTRATED 3D ARCADE ACTION.
CANOE THE DEADLY WHITE-WATER RAPIDS OF THE COLORADO AND
AXE, KNIFE, SHOOT, AND BOMB YOUR WAY TO A FORTUNE!**



Colorado 1880. David O'Brian, a penniless trapper, canoes up the South Platte river in search of adventure and riches.
Deep in the wilderness, he meets a dying Cheyenne Indian. Vowing to bury him in the style of a Warrior, O'Brian is rewarded with an ancient map showing the way to the legendary Lost Gold Mine of Pocahontas.
The route will lead him through Pawnee territory, the most fearsome of Indian tribes, across hostile wolf-infested land... and means he must shoot the terrifying white-water rapids of the Colorado in a flimsy Buffalo-hide canoe.
But there is no going back now for O'Brian is haunted by the scent of Gold.

Silmarils

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PALACE SOFTWARE

MIRRORSOFT'S MIXED BAG

WHAT a lot Mirrorsoft's got! First up is a surreal arcade adventure called **Theme Park Mystery**. It's a bizarre mix of arcade exploration and adventure-style puzzle-solving that takes you through four areas of an eerie theme park: Yesterday Land, Future Wars, Dream Land and Dragon Land. But can you solve the mysteries within and restore the park to profitability once more? Find out when Theme Park Mystery is released in April.

In May Cinemaware's third TV Sports installment hits our screens. **TV Sports: Baseball** promises an innovative approach to the sport and plenty of TV-style presentation. Surprisingly, the PC version is the first to be released – Amiga owners have to wait until June.

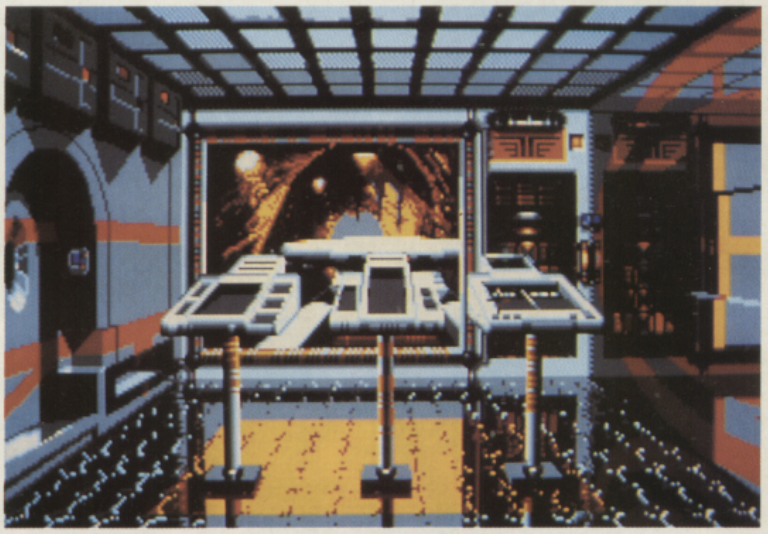
Spectrum HoloByte's **Flight Of The Intruder** is effectively the follow-up to its award-winning **Falcon**. Flying an A6 Intruder or an F4 Phantom, you progress through a series of missions over North Vietnam at the height of the conflict. ST, Amiga and PC versions should hit the streets simultaneously.

July sees the release of **Back To The Future Part II** (which should coincide with the third cinema installment). As in the film, the game has Marty battling through time to save the future, while thwarting the plans of the dastardly Biff. At about the same time you can also expect to see **Wings** (Cinemaware's World War One flight simulator featured in the last issue) and the Bitmap Brother's **Cadaver**.

Coming later in the year, **Riders Of Rohan** is a wargame-cum-adventure based on a section of Tolkien's classic fantasy novel Lord Of The Rings. It's set to appear in September along with **Speedball 2** (see page 36) and a parallax-scrolling platform romp called **Up And Away**, where two players compete to collect water from Earth in order to save their drought-stricken planet.

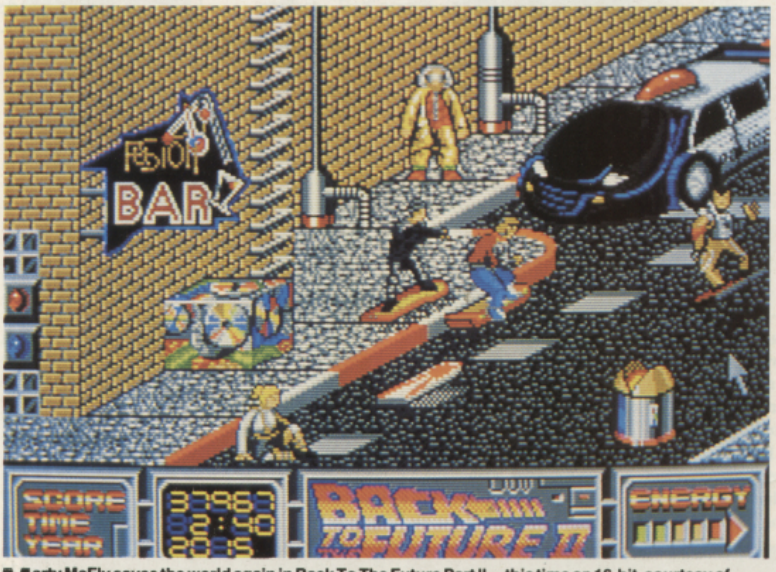
Finally, we have what could be two of Mirrorsoft's biggest releases of the year. **Killing Cloud** is the latest from Vektor Grafix (who wrote **Fighter Bomber**) and concerns a huge toxic raincloud that's mysteriously appeared over San Francisco and wiped out half the city's population! Your job is to find out how and why it got there, and of course, to get rid of it.

The second potential blockbuster is **Duster** from Realtime Software (the team behind Carrier Command). The pseudo-strategy extravaganza is set in the year 3800 AD, and promises plenty of action and depth. Roll on Christmas...



Realtime Software dusts off Duster for a Winter release.

Spectrum Holobyte takes to the air once more with Flight Of The Intruder.



Marty McFly saves the world again in Back To The Future Part II – this time on 16-bit, courtesy of Image Works.

Cinemaware's TV Sports: Baseball. The bases are loaded...

AN OCEAN RPG?

DESPITE having two games based on the forthcoming Clive Barker movie **Nightbreed** already in the pipeline (see Work In Progress, Issue 17), Ocean's promising a THIRD! This one's a Role Playing Game and is being produced by Imagitec.

Work's well under way – but don't expect to see anything until the latter half of the year (the movie's not released until August anyway). As Ocean's Gary Bracey puts it: "It's a bit different. We'll be pushing back the boundaries of RPG gaming with this one."

Sid Meier's

RAILROAD TYCOON

Escape To The Golden Age of Railroads, Where Your Imagination Decides The Fate Of A Nation

Big business. Tough decisons. Excitement, challenge and compelling attention to detail. ***Sid Meier's Railroad Tycoon*** **delivers an entire era to your personal computer.**

Sid Meier's Railroad Tycoon re-creates the golden age of railroads, giving players complete control of the economic resources of the Industrial Age, and the commercial struggles that would thrust the world into the 20th Century.

You control every aspect of your railroad's operation. Every choice you make affects the world around you. Determine the fate of towns, the prosperity of businesses, the success of entire industries.

Select the types of trains that will run on your railroad, determine their schedules and designate the kind of cargo they'll carry. Start in the early 1800s and try to keep business booming through modern times. Watch towns prosper as your empire grows; watch economies plunge as your fortunes wane.

Overcome natural hazards such as storms and floods, or man-made catastrophes like labor strikes and rate wars that can send you to the poorhouse quickly.

But be careful. There are other tycoons out there — brilliant industrialists such as Vanderbilt, J.P. Morgan and Jim Hill — determined to crush you or brush you from their path.

Sid Meier's Railroad Tycoon. Build a nation your way.

MICROPROSE
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AVAILABLE FOR YOUR IBM PC & COMPATIBLES.

RELEASES APRIL

ACCOLADE

Accolade promises PC owners the chance to exercise their grey matter, with the release of **Day Of The Viper** on the PC at £24.99.

The company's major new product comes in the form of **Gun Boat**, initially out on the PC, with the ST and Amiga versions following some time in June. Described as a river boat combat simulation, with a touch of the Apocalypse Now about it, there are 20 missions, spanning across Vietnam, Columbia and Panama.

ACTIVISION

A ninja on its own is a pretty daunting figure, but one that encompasses the spirit of the Great White Wolf is sure to cause double trouble. Yet you need all your weaponry and a hefty dose of energising crystals to tackle the dreaded beast that lurks in the bowls of the Earth. Converted from the Irem coin-op, Activision's **Ninja Spirit** is available mid-April on the ST and Amiga, priced at £24.99.

CODEMASTERS

Recapture the joy of crowding around a quiz machine in your local boozer, with **Pub Trivia Simulator**. Out on the firm's £4.99 budget label, PTS boasts plenty of testing questions – the beer 'n' tabs come extra.

CRL

The beginning of April should witness the release of **Psycho Killer** – fresh out of Broadmoor. The game is in fact the brainchild of Fergus McNeill, creator of Delta 4's **The Boggit** and **Bored Of The Rings** (remember those?). Written using a CD-ROM Altering System, Psycho Killer boasts cinematic digitised images, much of which comes from original footage, specifically shot for the game. Available on the Amiga, priced at £24.99.

Also in the pipeline is an as yet untitled 3D golf game for the 16-bit formats. The game depicts TV coverage of a golf tournament, taking camera angle views of four different courses, as well as a practice driving range.

▲Imperium: light years ahead.

▲An empirical weight: Imperium

ELECTRONIC ARTS

It's a good month for EA's SSG label, with four products set to hit the shelf, all bearing that distinctive SSG style. **Halls Of Montezuma** battles its way on to the Amiga, priced at £24.99, whilst **Gold Of The Americas** finally reaches the realms of the ST.

The dark and barbaric world of **Fire King** stamps its monster chaos onto the PC, with **The American Civil War** also entering the domain of the PC, complete with its six authentic battle sequences.

Meanwhile, lurking on the horizon, veering between a late April or early May release date, is EA's promised Big Thing – **Imperium** on the ST and Amiga (the subject of a Work In Progress in Issue 17). For all budding Napoleons this futuristic space strategy offers the chance to guide your empire over a millennium, eventually becoming supreme ruler of the sole Sun Empire.

▲Full of Eastern promise . . . Ninja Spirit

▲Aquatic arcade adventure in Treasure Trap.

◀Leatherneck: going down a bundle.

ELECTRONIC ZOO

Ensnare yourself in EZ's **Treasure Trap** on all formats at £24.99. Plunge through 100 multi-level rooms in this underwater puzzle game, searching for Ezmerelda's gold bars. Also pencilled in for an April release date is **Xiphos**, again on all formats at £24.99. Described as a space strategy with a difference, the game boasts realistic 3D space battles aided and abetted by billions of polygons.

And on a slightly different note, EZ is bundling five games with an Amiga or ST disk drive. The bundle has a nominal value of £125.00, but will sell at around the £90.00 mark, and as well as including such titles as Microdeal's **Leatherneck** and **Goldrunner**, Cosmi's **Super Huey**, Hewson's **Exolon**, and Audiogenic's **Impact**, the disk drives also come with a free One Year Warranty.

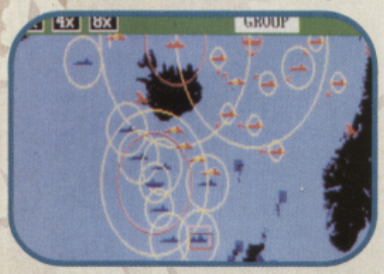
HARPOON

Somewhere in the desolate and freezing wastes of the North Atlantic, between Iceland and the Kola Peninsula, a Soviet battle fleet is lurking, ready to pounce on its prey.

As NATO Task Force Commander you must deploy your fleet of submarines, ships and aircraft to locate, engage and defeat the Kremlin's finest.

NATO

USSR



Produced by LARRY BOND the Naval Analyst, HARPOON portrays the superpower's final confrontation. Now it's up to you.

With graphics that make everything else look like finger painting and an arsenal of weaponry that comes up to your armpits. HARPOON'S non-stop action, relentless intensity and chilling responsibility will leave you gasping.

It's more than a mere game – it's a current event!!

Available now on PC.

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RELEASES APRIL

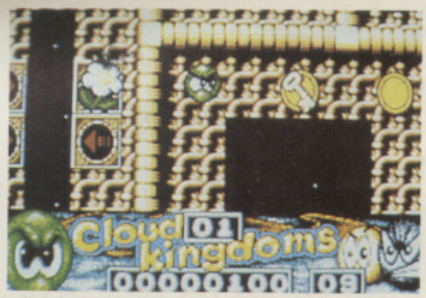
ENIGMA VARIATIONS

For all those Saturday morning TV buffs comes Enigma Variation's most prestigious license to date – **Defenders Of The Earth**. All the cartoon characters make an appearance, as Flash undertakes a daring plan to enter Ming's fortress, but the Men Of Frost and the Mighty Ice Robot are bound to put a few spanners in the works. Still, Mandrake, Phantom and even little Zuffy are all on hand to offer assistance. Initially available on the Amiga, an ST version is currently in development.

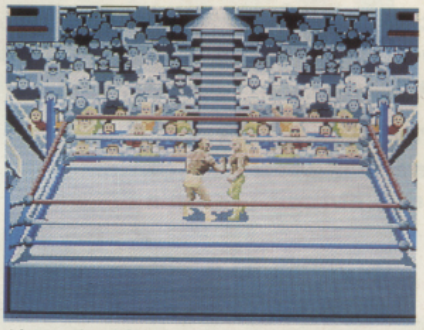
GRANDSLAM

After over three years in development, Thalion's vast role playing game, **Dragon Flight**, finally makes its debut on the 16-bit formats at £19.99. Described as being like **Dungeon Master** but six times bigger, Dragon Flight should while away a few hours, days, weeks – months even...

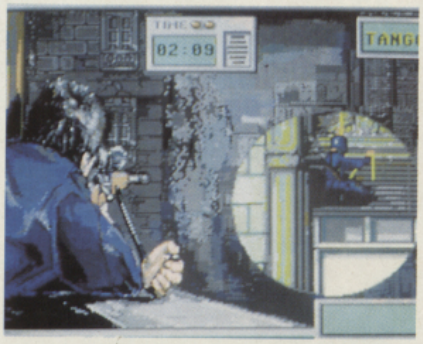
Another Thalion product in the pipeline is **Leaving Teramis**, also on the ST and Amiga at £19.99. As the title suggests, Teramis isn't the most wonderful place in the Universe, so it's hard luck that you happened to crash land there. So start rebuilding your space ship and get the hell out.



▲Sky high: Cloud Kingdoms.



▲International Championship Wrestling: gripping.



▲Hostages: held on compilation.

▲Fire And Brimstone from Firebird and Bak.

HEWSON

And in the Hewson corner we have **International Championship Wrestling** on the Amiga at £24.99. Flex your biceps against such muscle-bound mean machines as Kay-Leung 'Killer' Khan or Ivan 'The Bear' Trotsky. But if you are feeling particularly brave, try getting the mystical World champ, The Cuban Bruiser, into a Double Nelson.

INFOGRAMES

The French firm has quite a few releases stashed up its sleeve for the coming few weeks. First off the mark is the computer boardgame **Full Metal Planete** on the PC at £24.99, whilst the race 'n' chase **Chicago 90** also makes its way onto the PC at the same price.

Following hot on their heels comes **American Dream** on all formats at £24.99. This four-game compilation hosts such Infogrames classics as **Hostages**, **Bubble Ghost**, **Super Ski** and **Operation Neptune**. Another compilation called **Future Dream** is also in the pipeline, but with cross-Channel communication being what it is, the English office is not yet sure of its content.

Bubble Plus, the sequel to the endearing **Bubble Ghost**, is also due to arrive on all formats at £24.99, along with the road racer **Highway Patrol**. Meanwhile **Terrain Editor**, an add-on disk for **Sim City**, offers new features, such as trees and rivers, to the Amiga and PC owner for £19.99.

LOGOTRON

Having split from its business software division last year, Logotron Entertainment is determined to seal the break with the introduction of its new label, Millennium. First off the mark under the new banner is **Cloud Kingdoms** on all formats, priced at £24.99. Set in a world of bouncing balls and lost diamonds, this 32-level multi-directional scroller is guaranteed to test your mental and manual dexterity to the full.

MICROPROSE

Currently winging its way across the Atlantic for a late April release date is MicroProse's **M1 Tank Platoon** on the ST and Amiga. All the thrills and spills of a realistic tank simulation involves 16 possible outlooks on the ensuing battles.

Also on the MicroProse label comes **Railroad Tycoon** on the PC. Pioneer your railway path through the mid-West, Europe or the UK to the backdrop of much financial wheeling and dealing.

And from the creator of **Goldrunner** comes Steve Bak's **Fire And Brimstone**. Take control of Thor, the God Of Thunder in your quest to extinguish the fires of hell. Available on the ST and Amiga, this multi-level arcade romp boasts plenty of puzzles and traps in the genre of **Rick Dangerous**.

Castle Master

A sensational new 3D Action Adventure from Incentive, in spectacular Super Freescape ™

Incentive, the award-winning team behind the massive hits DRILLER, DARK SIDE and TOTAL ECLIPSE have done it again! CASTLE MASTER is the result of years of work on their highly advanced Animated Solid 3D development system. It will catapult you into a world of fantasy.

Use your eyes and ears to discover solutions to the brain-twisting puzzles. Secret rooms, twisting corridors and hidden traps, all in superb SOLID 3D make Castle Master the most atmospheric Action Adventure you'll ever play.

Enter 'Castle Eternity' if you dare! You could be there forever.

ROLL OF HONOUR

Incentive's past awards include

Crash Readers' Awards
– Best Graphics
– Most Imaginative Game
– Best Overall Game

•

C & VG Golden Joystick Award

•

Commodore Computing International Oskar

•

Amstrad 100% Prix De L'Innovation

•

Computer Industry Award – 8 Bit Programmers of the Year

Available on: Atari ST, Amiga, IBM PC 3,5" & 5,25", Commodore 64 (cassette, disk) Amstrad (cassette, disk) Spectrum +3, Spectrum 48/128

Atari ST C 64 Spectrum & Amiga Screenshots

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incentive
The Award Winners

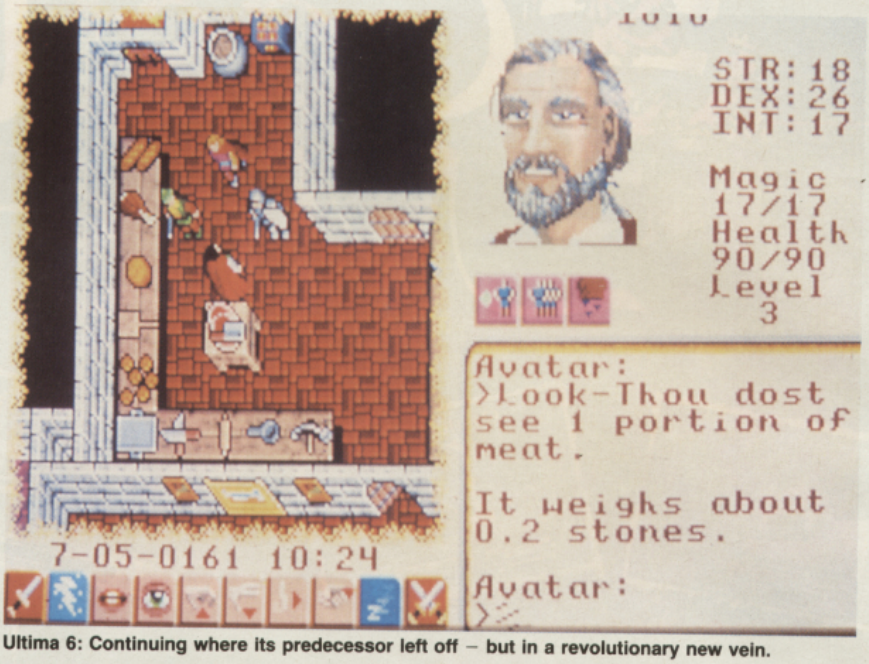
DOMARK

RELEASES APRIL

MINDSCAPE

Currently celebrating its tenth birthday, the Ultima series kicks off the new decade with the sixth version of Origin's highly successful role-playing romp. Picking up where **Ultima 5** left off, this one incorporates a revolutionary new playing system, guaranteeing that despite its veteran rank, Ultima refuses to show its age – a bit like Joan Collins really. Out on the PC at £29.99.

Finally, there's Software Toolwork's **Life And Death**. The abdomen-orientated operation simulation was reviewed on the PC in Issue Nine, but is now doing the rounds on ST and Amiga for £29.99.



Ultima 6: Continuing where its predecessor left off – but in a revolutionary new vein.

MIRRORSOFT

FTL's **Dungeon Master** rears its impressive head on the PC at long last, with Mirrorsoft luring prospective purchasers with the prospect of a free and special joystick-cum-sound chip adaptor – for a limited period only, though.

NOVAGEN

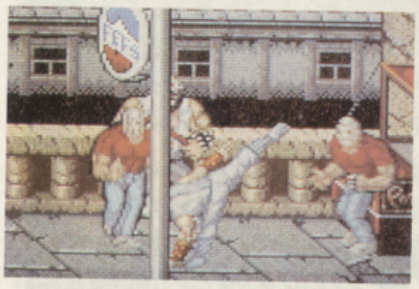
The company's long, long, long awaited sequel to **Mercenary** is really, truly, honestly out now in the form of **Damocles**. This leading-edge 3D adventure costs £24.99 on ST and Amiga.

OCEAN

Wizards, pirates, dragons and a host of other unsavoury characters all run amok in Ocean's latest arcade adventure epic, **Ivanhoe**. Based on that legendary character, the game boasts top class animation, with the ST version (£19.99) making an April release date, whilst Amiga will probably hit the shelves around May.

Also bolstering up Ocean's Easter line-up is **The Official Liverpool FC Soccer**. Management strategy and good ol' fashioned football combine, with the game due out late April on the ST (£19.99) and Amiga (£24.99). Meanwhile Ocean's Xmas Big Thing, **The Untouchables** finally moves on to the PC, whilst the coin-op conversion **Shadow Warrior** beats its way onto the 16-bit machines.

Light relief with Shadow Warrior.



PALACE

The year's 1801 and the setting's the vast and unchartered terrains of Colorado. In return for burying a dying Indian in the style of a warrior, you receive an ancient map, which if followed correctly leads to the legendary lost gold mine of Poca Lontas. The search is on, taking you through perilous Pawnee territory and wolf-infested countryside, in a game which boasts over 100 different screens. French Maison De Software Silmarils (remember Manhattan Dealers?) is responsible for **Colorado**, which is due to appear on these shores around late April, thanks to a recent deal with Palace. ST, Amiga and PC are all priced at £24.99.

PANDORA

A nice ecologically sound number here, with **Debut**, a complete planet simulation. Take control of an over-populated, highly-polluted planet – not desperately dissimilar to Earth really – clear up the greenhouse effect and make the place a stable and habitable world in which to live. If only it could be so easy. Debut's due out in mid-April on ST and Amiga, priced at £24.99.

Also on the Pandora label comes the PC incarnation of the fantasy role playing **Galdregon's Domain**, along with aliens galore in the adventurous space oddysey **Xenomorph** on ST and Amiga. All at £24.99.

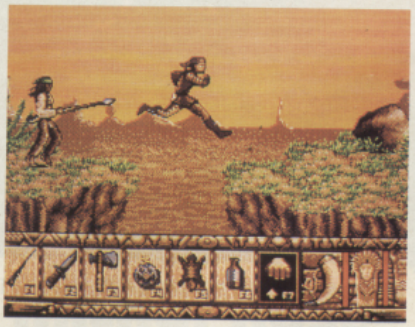
PSYGNOSIS

Anarchy is Psygnosis' lone offering this Easter, and is initially out on the ST at £24.99, with the Amiga version following sometime in May. Written by Wayne Smithson, creator of **Baal**, Anarchy makes no false claims – it's arcade shoot 'em up pure and simple.

US GOLD

In what is bound to be the first in a furor of World Cup games comes US Gold's **Italy 1990**. The firm is being decidedly tight-lipped about this latest title, only offering: "It's not just another football game." Clearly keen to keep Italy 1990 under wraps until the very last minute, US Gold will no doubt reveal all come late April, when the game kicks into action on ST and Amiga at £24.99.

Firming up its Lucasfilm links, US Gold is also proud to present Their Finest Hour. This serious flight simulation based on the Battle Of Britain is out on 16-bit around mid-April, with a £29.99 price tag and a 60-page manual.



Colorado capers from Silmaris via Palace.

ATARI ST™ AMIGA IBM

It is our privilege and pleasure to introduce the first 2 titles of a completely new range of the highest quality games for your enjoyment with your Atari ST/E, Commodore Amiga or IBM PC.

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ENCORE

Operation Stealth

Following the interactive science fiction of Future Wars, Delphine once again takes to the air – only this time it also manages to keep its feet firmly on the ground. Gary Whitta sneaks an early look.

After the runaway success of Delphine Software's first foray into the adventure market with its innovative Cinematique system, the team is hard at work producing another game using the same system. **Future Wars: Time Travellers** (which has received almost undivided critical acclaim and armfuls of awards since its release last year) is to be followed up by something in a slightly darker vein, set in the world of international espionage – **Operation Stealth**.

You are John Glames, the CIA's top undercover agent on a mission to save the free world as you know it. A top-secret state-of-the-art radar-invisible Stealth Bomber has mysteriously disappeared from a high-security US Air Force base and it's up to you to get it back and bring the culprits to justice.

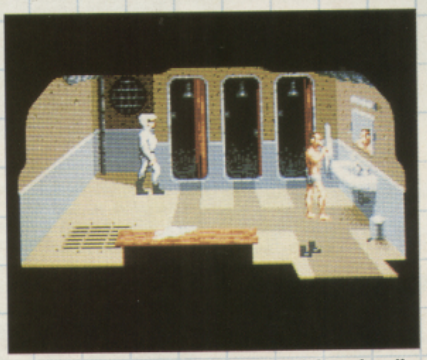
At first you have no leads as to where the jet may have gone, but slowly pieces begin to fit together and you realise that the plane is more than likely to be found in the South American republic of Paragua, where some very strange things have been happening of late. For a start the country's leader General Manigua has, over the last few months, changed from being a respected diplomatic leader to a drug-crazed psychotic dictator. Not a pretty sight. Oh, and he's violently anti-American, which doesn't help things much.

To make matters worse, your underground contacts have informed you that the KGB has heard about the bomber's disappearance, and has despatched some of its top agents to Paragua to find it. And that's not all – the shady international crime syndicate SPYDER is also rumoured to be on the scent. With the Stealth project representing the lynchpin of America's strategic superiority, losing it to the either the reds or SPYDER would be a catastrophe. Realising this, you pack your suitcase with a variety of James Bond-style gadgets and jet off to Paragua to investigate.

Once again, Cinematique's inventor Paul Cuisset is at the helm, designing and programming the game over the course of the last year with Phillipe Chastel. And while Cinematique's 'look Ma, no text' adventure system stays roughly the same as in Future Wars, the system has been enhanced and improved to suit the new game's style. Some of the original's less friendly features have been ironed out, too: it's no longer necessary to stand right on top of an object to examine it or pick it up, and it's also possible to carry out detailed examinations of objects in your possession.

In the graphics department, things stay pretty much the same, but there have been a few changes – partly due to the more serious 'down to Earth' storyline and partly due to the addition of Michel Bacquet (who produced the exquisite visuals for Ocean's Ivanhoe) to the team. And there's to be plenty more funky music to accompany the action, once again produced by Jean Baudoit.

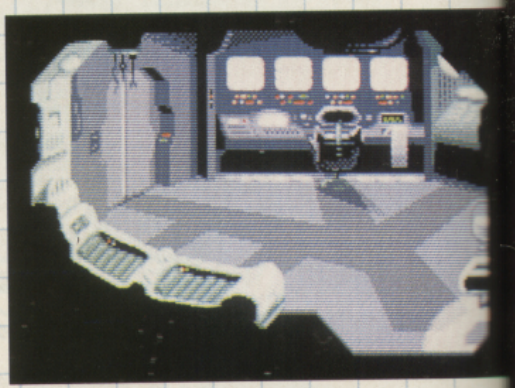
With work on Operation Stealth nearing completion, its release, once again via Palace Software, is scheduled for sometime over the next month or so. Oh, and by the way, Paul and his team are already hard at work on the next Cinematique game after that – a murder mystery set on a luxury ocean liner called **Cruise For A Cadaver**.



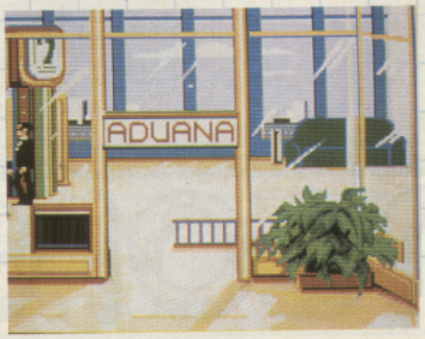
Your mission starts at Paragua International Airport – but where do you go from here? You could hail a cab, or perhaps that woman to the left could be of some assistance...

Strip down to your undies for a quick wash and brush-up (note your reflection in the mirror). But who's the mysterious figure behind you?

Like Future Wars, Operation Stealth has a distinctive graphic style. While many of the locations are quite small, the level of graphic detail is extremely high – this control room (the purpose of which must remain a secret for the time being) is a shining example.

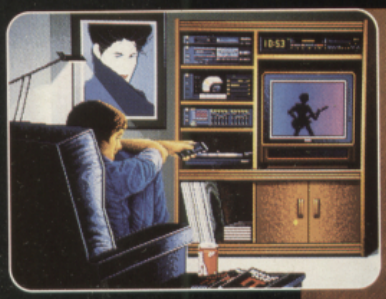


Still no sign of that elusive Stealth jet – hardly surprising at this early stage. In fact, it's all very relaxed at the moment... until you get shot in the back by the KGB.



Ultima VI

The False Prophet



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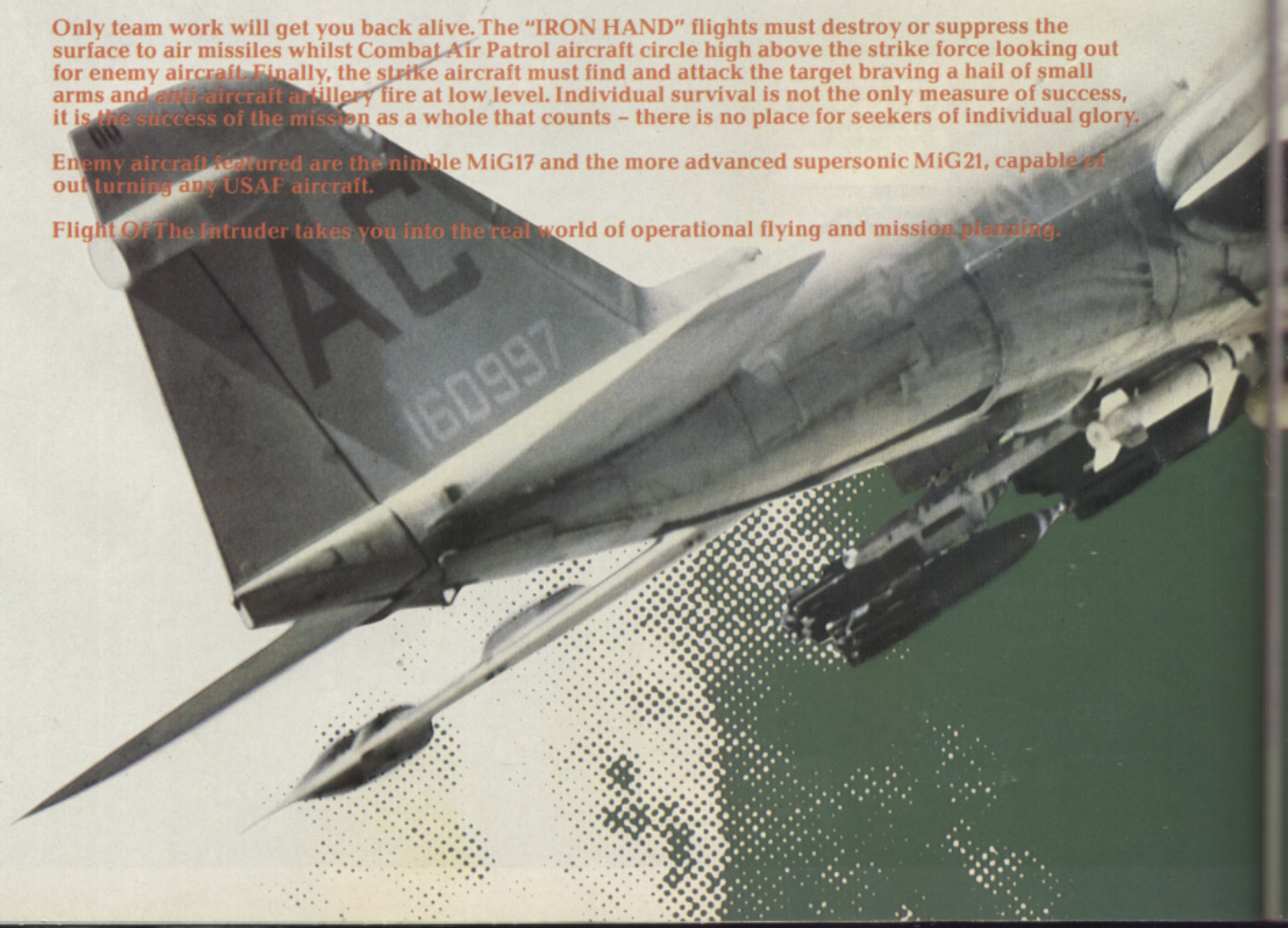

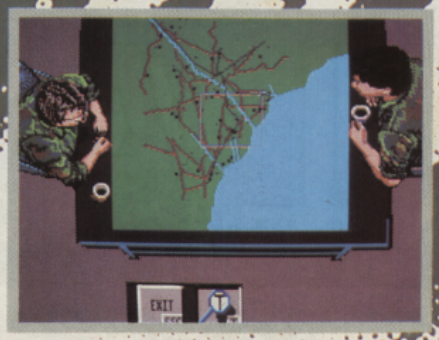

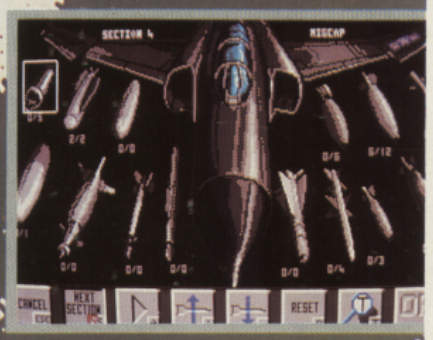

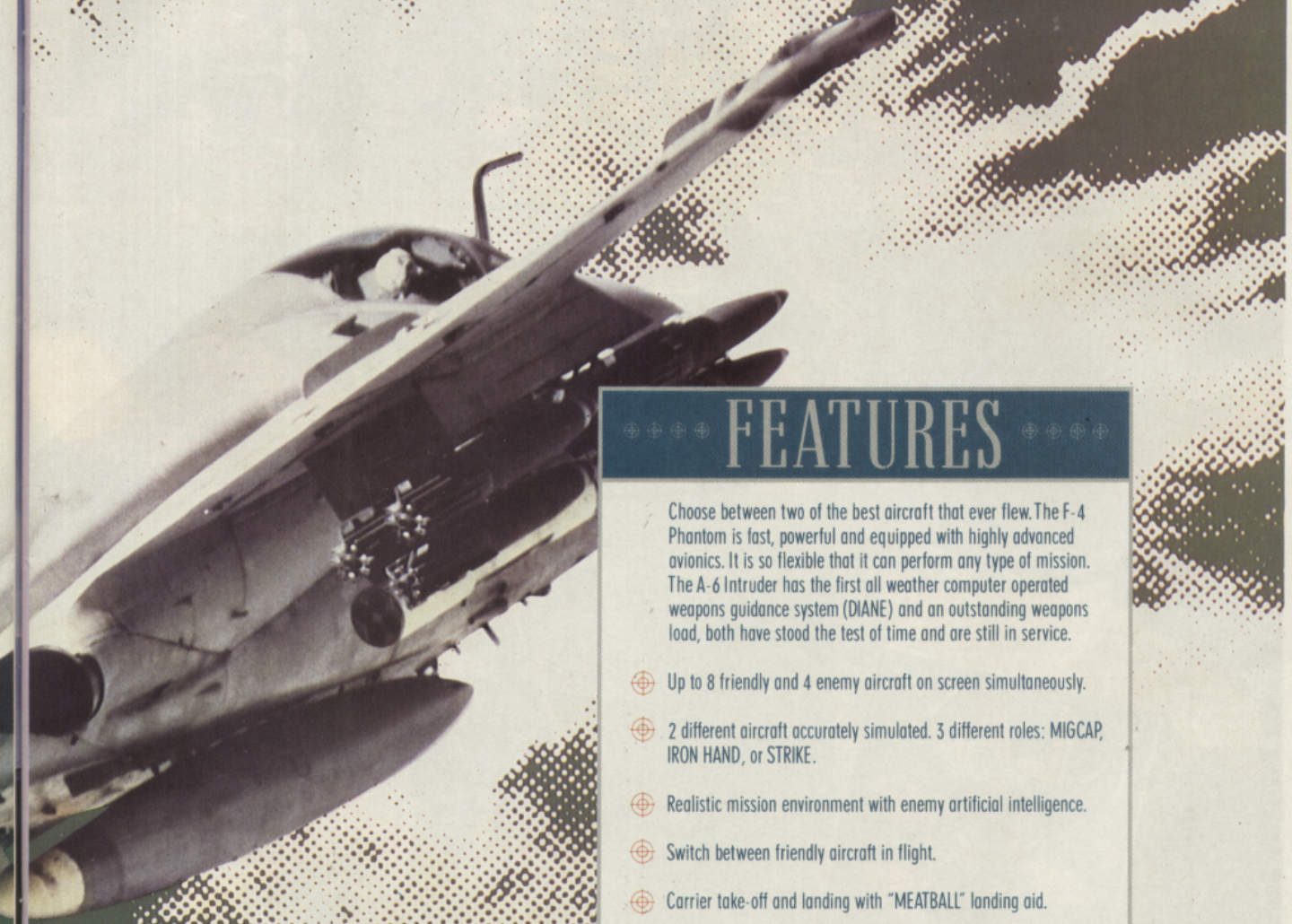

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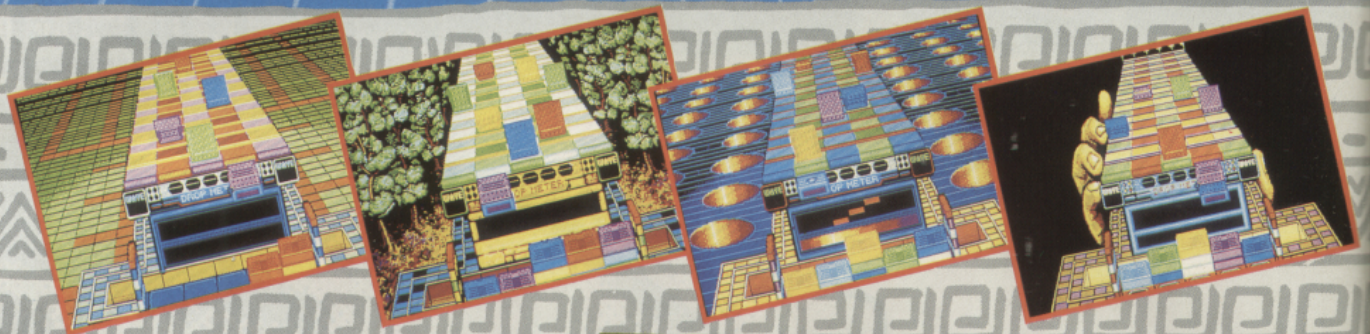

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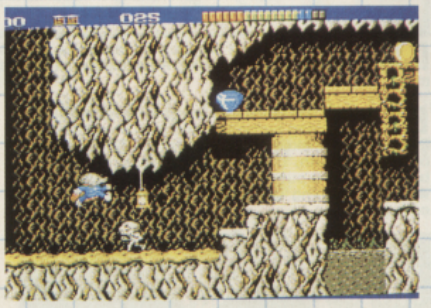
Impossamole

He's back – as never seen before. Gremlin's cute coal miner Monty Mole makes a return to the screen after a three year absence. Gary Whitta dug deep and got plenty of dirt on the Core Design revival.

The first level: The Klondike Mines. Here you are accosted by the skeletons of dead miners, bats that home in on you, gold prospectors who don't take kindly to moles muscling in on their action and even coal-filled carts that threaten to run you over. Core has included the famous Monty Crushers from the 8-bit games, but has added a little extra. If Monty get crushed, he emerges squashed down to half his original size!



As well as picking objects from around the maze, Monty can also stop off at the hardware store on every level. Once it's found, a Shop Mole (who's not yet been named) appears and guides Monty around. Everything from bazooka to energy-giving worm cans are available here – but at a price. "There's one type of alien on every level that drops a golden coin worth 25 Mole Units when killed," Rob reveals. "The shop is really a presentational feature, but we wanted to find some way of making it work with the gameplay, so what we've done is camouflage the shop entrances so you have to find them."

The Oriental World is populated by Coolies, Bruce Lee fighters, Sumo Wrestlers and rampaging Sony Walkmen! My personal favourite, says Rob, are the Japanese tourists who wander around the level with a camera hanging down. Every now and again they get the camera and take a snapshot, accompanied by a blinding flash that whites the screen out. If Monty is facing the same way as the cameraman's flash when it goes off, he's blinded and loses energy.

Soup Cans found dotted around the map come in handy, as Rob explains. "Each weapon, including Monty's kick comes in three strengths, and by picking up a soup can you can 'soup up' your weapon. For example, your basic gun shoots a little 'pop-pop' bullet, but when it's souped up it fires a volley of three. At its most powerful it shoots a volley of homing bullets that knock out everything."

It seems like only yesterday that Monty burst onto our screens as one of the industry's earliest cult computer characters. He first appeared in **Wanted: Monty Mole** (1984) as a satirical statement by Gremlin Boss Ian Stewart and programmer Peter Harrap on the long-running miners' strike – which in turn created plenty of controversy of its own, with its near-the-knuckle storyline.

Accused of stealing coal from 'down t'pit', Monty faced a life in jail unless he could escape from the law, while collecting coal to keep himself warm, and ballot papers to defeat the maniacal Arthur Scargill.

When he was finally banged up in the much-demanded sequel **Monty Is Innocent** (1985), it was up to Monty's old pal (and master safecracker) Sam Stoat to release our furry friend from high security Scudmore Prison. And release him Sam did – although the graphic adventure format failed to attract anywhere near as much attention as its predecessor.

In the third of the series however, Monty returned to the popular platform format for **Monty On The Run** (1986), which saw the super-fit rodent trying to escape from Britain on a with the police hot on his trail.

In Auf Wiedersehen Monty (1987), the fourth (and supposedly final) installment in the ongoing saga, Monty had to travel around Europe, earning enough money to buy himself the Greek island of Montos before Intermole could catch up with him. But when Monty finally bought and escaped to the island, he was never heard of again.

Until now.

After three years of basking on Montos, our sun-baked hero is back in action. On one fine day while Monty soaks up the sun on the beach, a mysterious voice booms down from the clouds, pronouncing him "The Chosen One" with a mission to destroy five evil guardians. Initially reluctant, Monty soon changes his mind when he's given superhuman powers, a natty blue suit and cape, and the title of Impossamole with which to carry out his quest. Leaping into his private yacht, the SS Coal Bucket, Monty flexes his pecs and prepares for his dynamic return to action...

And it's with this scenario that Gremlin has brought Monty Mole back into the limelight with **Impossamole**. But why now, just when he's beginning to enjoy his restful exile? Gremlin's Richard Barclay explains: "We realised that platform games were becoming popular again, particularly with 16-bit gamesplayers. There's been more and more demand for them recently, as we saw with **Rick Dangerous** and **Switchblade**, so we thought we'd try to address this re-interest." And if you want to produce a platform game, who better than Monty Mole to star in it?

The task of designing and programming a new game good enough for the Monty name was given to Core Design, the team behind Rick Dangerous, Switchblade, and **Axel's Magic Hammer** – three of the best platform 16-bit platform games to date. But even with such an impressive track record on the levels 'n' ladders scene, Core admits that following up the cult quartet of Monty games was no easy task.

"At first we looked at all the old games and picked

out all the elements from them that we could include in Impossamole," explains Core's Rob Toone, who's designed the game along with Greg Holmes and programmer Andy 'Axel' Green. "We wanted to create something a bit more arcadey in style. You wouldn't expect to see any of the old Monty games in an arcade, but I don't think Impossamole would look out of place."

To look at Impossamole here, you'd be forgiven for thinking that Core has just mashed together a few of its ideas from Rick D and Switchblade – but once you play it, it's easy to see that it's got a style all of its own. The five levels are each around 42 screens in size and built like a maze, so unlike in Rick you have a choice of routes to take, and there's always something new to explore, or another set of aliens to battle.

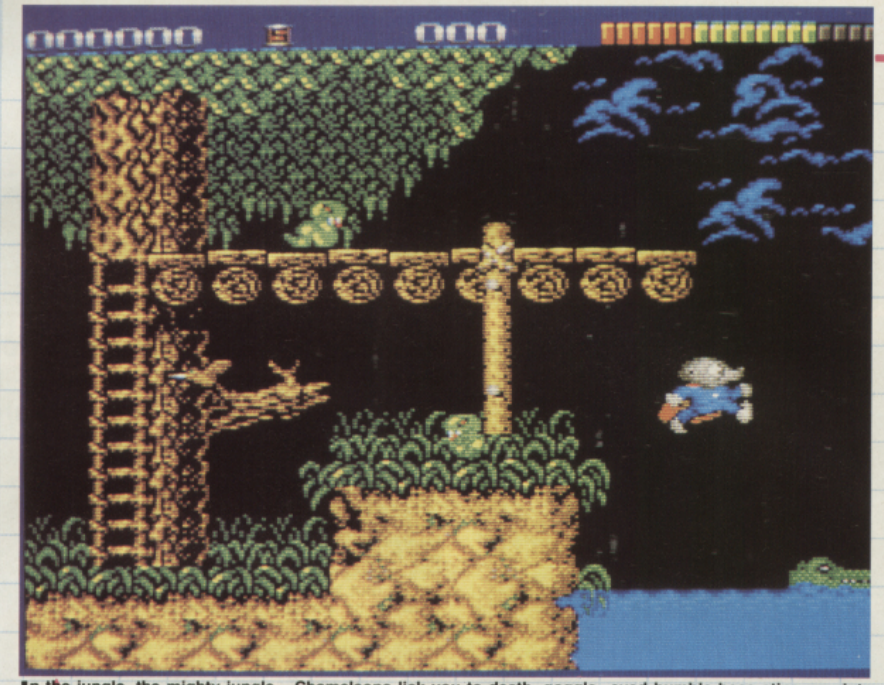
It's the combat aspect of Impossamole that Core believes sets its game apart from the rest. Rather than having to avoid the aliens on pain of death, in Impossamole Monty can beat the living daylights out of them, thanks to his new-found super powers. Starting with just a powerful kick to defend himself, Monty boosts his destructive power along the way by collecting super-weapons. Bombs, guns, and rocket launchers are all at his disposal – but only temporarily. "We decided to give the weapons a time limit rather than an amount of ammunition, as ammo is too easy to waste," Rob reveals. "With a timer we can tell exactly how far a player is going to get with his new weapon, and set the aliens in the next part of the maze accordingly."

Of the five levels in Impossamole, the first four (The Klondike Mines, Oriental World, Jungle World and Ice World) are accessible from a menu on the title screen, and can be played in any order. "We felt that if someone buys a game and can't complete the first level, he gets frustrated because he wants to see more of the game. With this system he can see much more." The final level, codenamed Bermuda Triangle, is only be seen when the first four have been completed – and what you can expect to find there won't pass Core's lips.

Like the previous Monty games, Impossamole is devoid of all seriousness. Everything from the aliens to Monty's dapper superhero costume has a wacky flavour – which created something of a problem for graphic designer Terry Lloyd... "At first I just wondered what I was going to do. I knew we wanted something comical and cute, like in Rick and Axel, but we didn't want to go over the top with the design. We've got about 12 types of alien per level now, and they're all funny, but for different reasons. Some are funny because of what they look like, and some are funny because of what they do."

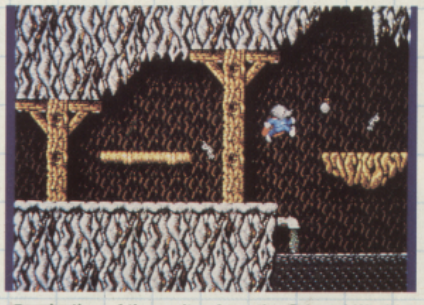
Sound is to be provided by Benn Daglish, who's worked with Rob Hubbard in the past, writing soundtracks for the previous Monty game. There's to be a choice of music or sound effects, although Core isn't sure what either will sound like as yet. "Ian Stewart gave Benn the brief, and now he's gone away and is doing it. We'll be interested to hear what it sounds like when it comes back."

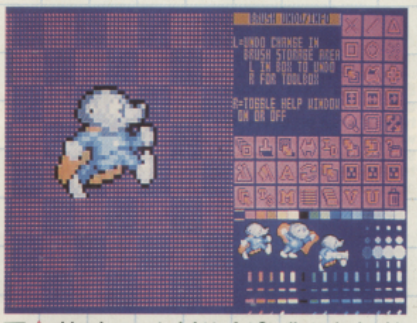
In fact sound seems to be only thing that isn't finalised. After five months of work, Impossamole is all but complete, and it's just a case of tidying up and bug-hunting. So can we expect a typically–extravagant Monty-style ending? Ha! We're not saying. I think we'll be doing something like the endings of Japanese console and arcade games. Know what I mean..."



In the jungle, the mighty jungle... Chameleons lick you to death, goggle–eyed bumble bees sting you into submission and monkeys swing from the branches and throw bananas when they land. It shouldn't happen to a mole.

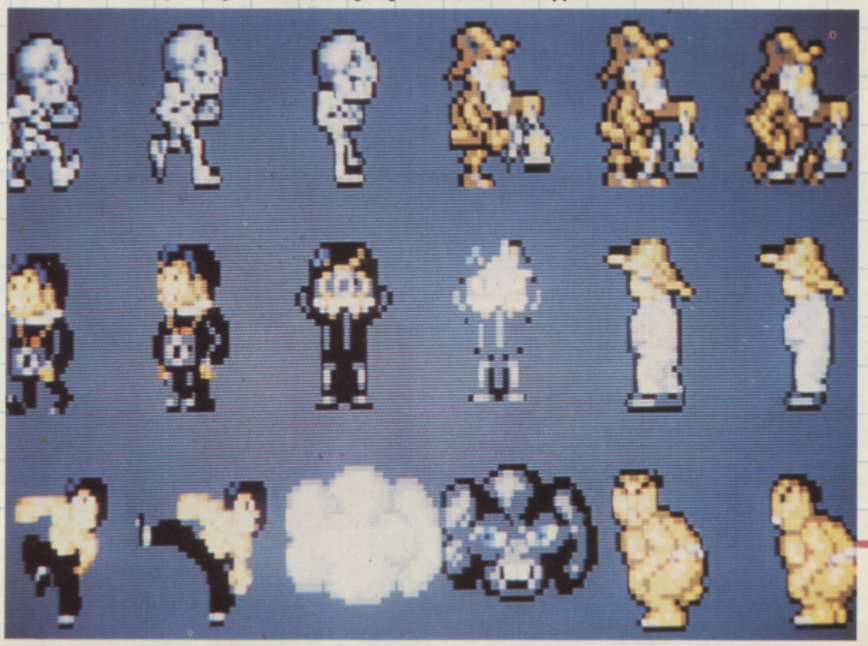
Each level is designed as a long strip of screens for memory saving purposes, and then compiled into the maze that makes up the final level – but it's not all one big labyrinth. There are secret treasure rooms to be found. This is pure bliss for Monty – no aliens to deal with and nothing but weapons and worm-cans to collect.





Terry Lloyd goes straight to Art Studio to design his sprites, rather than sketch them out on paper first. "What you draw on paper and what finally appears on screen always turn out to be two different things," he explains. Here, a finished Monty sprite leaps into the air on the main design screen, while all the animation frames for the jump are shown below.

A selection of the sprites from the Oriental World and the Klondike Mines, including the infamous Japanese tourist who takes pictures of everything he sees. Says Terry Lloyd: A sprite can take anything from half an hour to a couple of days to do, with all its animation frames – you can never tell. We've often started designing a sprite, and then realised halfway through that it wasn't going to work so we scrapped it.



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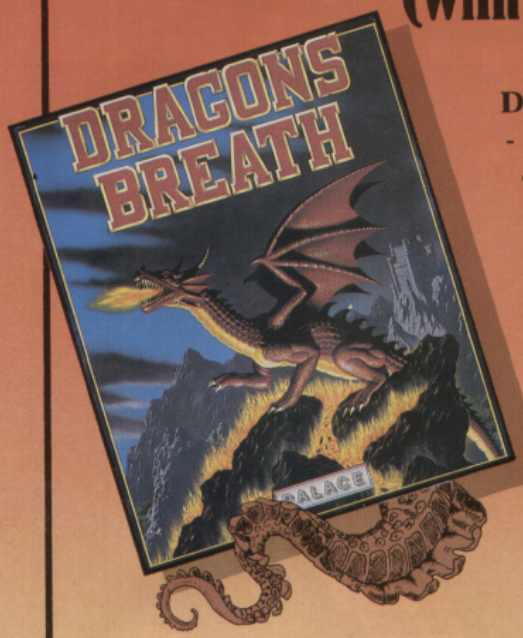

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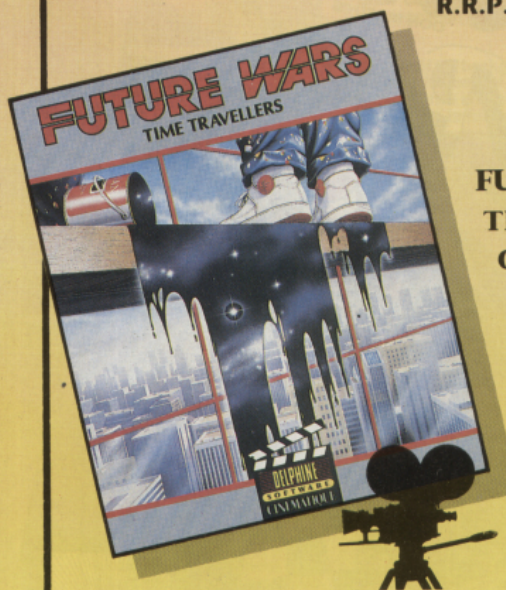

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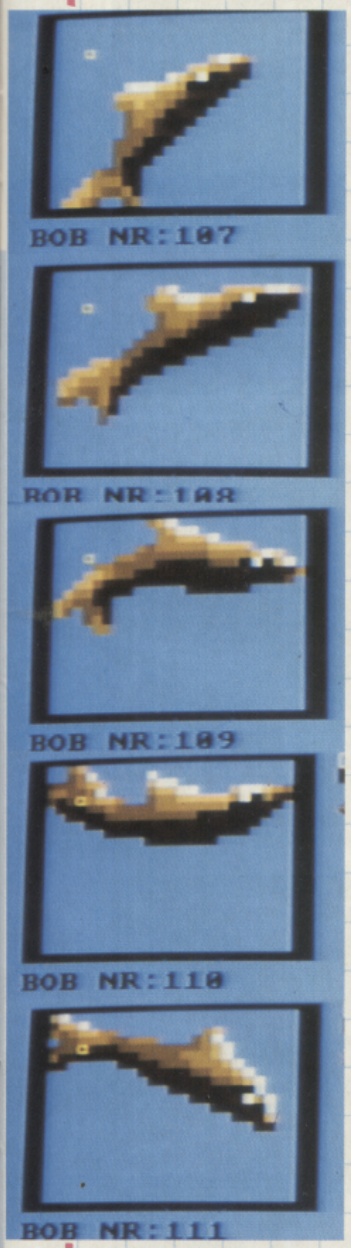
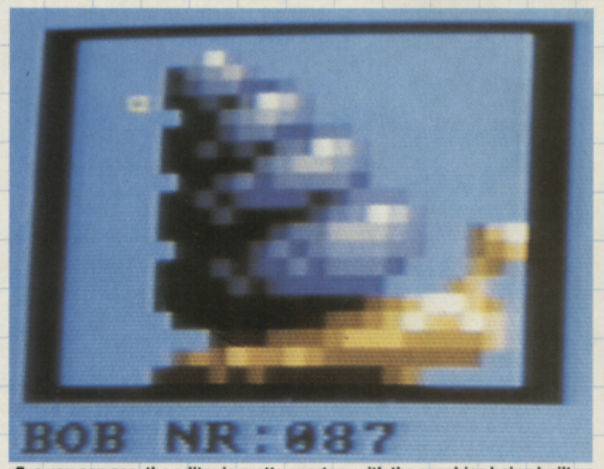
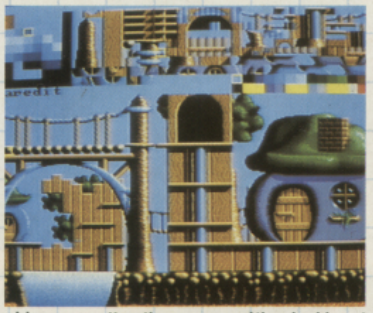
Flimbo's Quest



This sequence demonstrates the amount of sheer mouse-bursting work that's gone into Flimbo. The fish leaping takes place in a single block and throughout the sequence the fish stays inside the boundaries of that block.

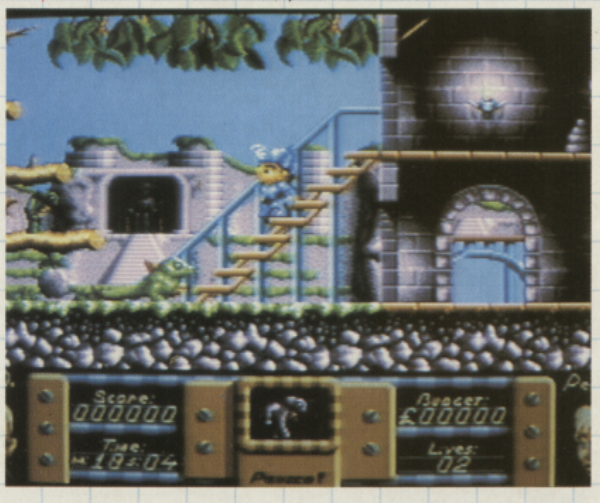


As you can see, the editor is pretty spartan, with the graphics being built up pixel by pixel in the window on the top left of the screen. When the artist has a complete block, it's 'saved' to the character set on the top right. Then blocks can be selected from the character set and added in any position in the background or foreground scroll.



The reason the editor was made so you could edit both sections of the parallax scroll was so you could see where the graphics were moving to and behind what. This means the artist didn't spend hours drawing graphics that would be hidden behind the foreground. Check out the rope bridges... how do you draw curves like that by eye alone, eh?

Some of the background graphics are so attractive you spend time looking at them instead of paying attention to the bad guys. A fatal mistake. The backgrounds are as lush and colourful as the foregrounds, and great care has been taken to make them watchable, and not cluttered.



Phil South takes a hop, skip and a jump to System 3's Pinner HQ to find that its latest is something of a departure from its fightin' 'n' fumpin' past.

Consoles have had a big effect on computer games, bringing us back to the good old days of cute platform games. And **Flimbo's Quest**, designed by a group of Dutch programmers specially for System 3 is no exception.

The designer of Flimbo's Quest is Laurens Van Der Donk, with help from System 3's own pucker diamond geezer, Adrian Cale. "Basically what we've got here is something that System 3 has not been known for in the past," Cale reveals. "It's a completely new field for us, because it's a 'cute' platform game. Many have been done, obviously, but we don't feel many have been as polished as this. Anyone familiar with System 3 games knows we do release quality games – finished games. We release very few games, but good games and games that sell."

But Flimbo's Quest is a startling departure from the normal System 3 product, and couldn't really be further from the likes of the **Last Ninjas**. So why a cute platform game in this day and age? Well, firstly System 3 is parting from its age old deal with Activision to produce its own games on its own label, so what better than a total departure?

But don't think that just because Flimbo's is a new product and one that didn't take very long to make that it lacks the quality that Adrian was talking about. Flimbo's is technically impressive, more so for the fact that this big, 32-colour, parallax scrolling romp is the first ever Amiga fare written by these lads from the land of clogs and cheese.

Flimbo is the story of a simple young lad and a Mad Professor, but it's a trifle more complex than that... "What you've got is a Mad Professor who's been looking for an elixir of eternal youth. What's happened is that he's tried the experiment on himself and it's gone wrong and now he's rapidly ageing – it's had the reverse effect."

The only way he can reverse the situation is by kidnapping a nubile young girl, strapping her up to the experiment, and so he gets her youth and she cops it. So now, enter Flimbo. He's the hero, and it's his girlfriend who's been kidnapped by the professor. She's hooked up to the machine and the experiment is going to take place at midnight."

In order to get to the castle, Flimbo has to race against the clock through some weird and wonderful worlds, and seven levels. You have to pick up scrolls as you go through each world. Each scroll contains a letter of a password to let you leave the world and move to the next one. Having shot a creature to collect a scroll, you take it to a shop on one of the platforms. Here you give the scroll to an old man who adds the letters together.

You can also pick up bags of money which enable you to buy certain extra powers from the shop: more powerful shots, extra time, or invulnerability. You can also buy scrolls, but this requires lots of loot.

There are special hidden rooms in each world, and these are FULL of money. There are two ways you can collect this money – either by running about and picking it up, or by collecting each bag in a special order which sometimes doubles the amount.

The team behind Flimbo's Quest comprises designer Laurens Van Der Donk, artist Arthur Van Gol, and programmer Roger Schuttelaar. It would be easy to assume that such a good looking and playing program was written by a crack team of Amiga programmers, but in fact the three of them are still at school in Holland, and Flimbo is the team's first ever game design – and their first program on the Amiga.

The game was originally programmed on the C64, and in fact the first version of the game running on the Amiga was on a C64 emulator! The game was seen first at the last PC Show in September 1989, and it's taken since then to get it converted to the Amiga. The files were transferred to the Amiga using the C64 emulator and then tweaked to fit.

Rather than being drawn on DPaint III like you'd expect, the graphics were in fact rendered on the team's own editor. The program they wrote bore more resemblance to some old-fashioned C64 graphic editor, and each graphic, big or small, was built up from smaller blocks and bolted together. Something of a brute-force method in anyone else's hands, but the results are surprisingly polished and effective.

The most impressive part of the editor, which handles both sprites and backgrounds, is that it drew both the levels of parallax at once, allowing the artist to draw the background and foreground scrolls on the same screen. The foreground is then removed to reveal the background for construction. They didn't actually draw on the screen, but rather assembled it from previously drawn blocks. As you can imagine this is an incredibly tedious process, especially considering the amount of colour and vitality in the graphics.

But it's all worth it. The graphics are sparkling, and this is due in no small amount to the fact that there are 32 colours on everything in the game, from the far background scroll to the players on the screen! Laurens Van Der Donk explained the technical aspects...

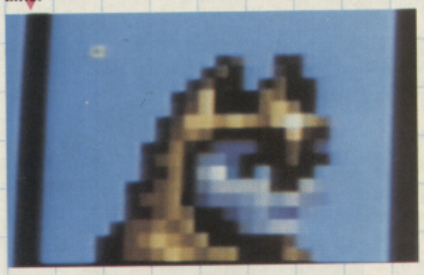
"Basically, the reason it looks so clear is that it's got so many colours. Most Amiga games tend to be two hardware 'playfields', which are eight colours in foreground and background. But in this we've for the full brute force method, which is harder, and gone for 32 colours for the background, 32 colours for the foreground, and 32 colours again for the sprites. So you have the maximum you can really get. You literally can't squeeze any more out of it. Rather than use DPaint III, we've written our own special purpose editor. Because there are so many sprites and graphics, to get them all is as small an area as possible, all the graphics are split into these tiny blocks."

Laurens explained that the editor was based on the editor that their artist was used to on the 64. It's all based on keyboard presses to set the pixels and move the tiny cursor around the screen.

The game was written in assembly language using the popular Seka assembler, a program which finds more use in Europe than it does in the UK. It was programmed by Roger in his spare time on visits to Laurens, who lives in a place 20 miles away. In the meantime Arthur, who lives in yet another place, was beavering away on the laborious editor generating the 'seriously cute' graphics. Laurens is keen to point out complex parts of the program: "I don't know whether anyone will like to know, programmers and like that, but with each enemy is a table in memory telling him where he moves, what colour he is, and like that. So the general colours of some enemies are set randomly each time they appear."

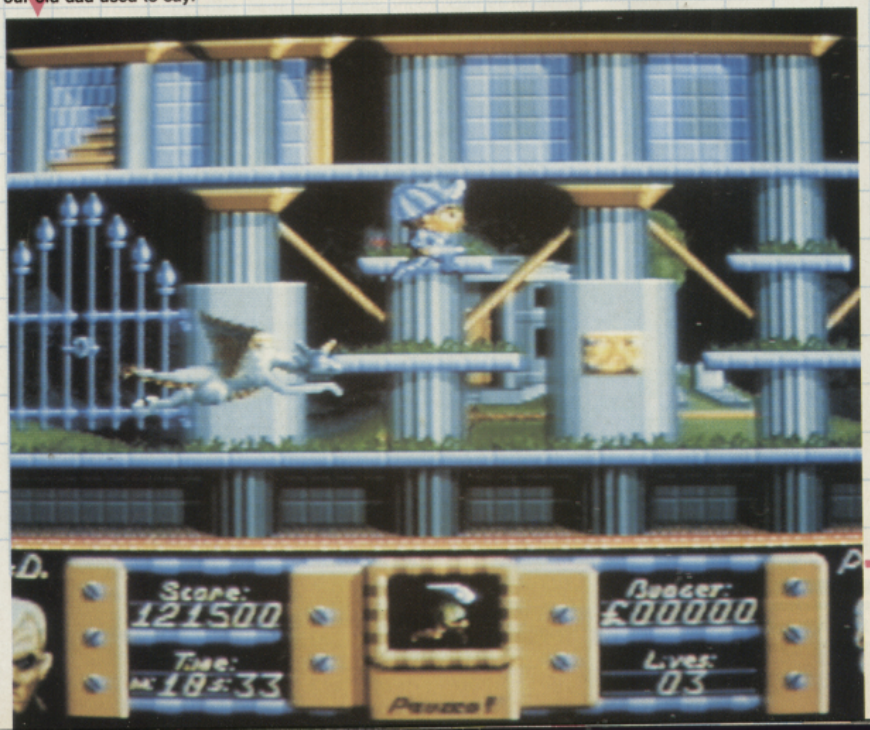
Your only friend is this old wizard. Just like Mr Benn's chum, he pops up 'as if by magic' and offers to sell you a things you might need to take out those bad guys. If you have enough dosh you can buy what you need – you can even cheat and buy special passwords!

Other examples of the 'nice' graphics... try these Batman-like baddies and the shiny coins you can collect. All the graphics are made like this, one dot at a time.



Some of the most difficult enemies are these little men who run at the same speed as you and track your sprite across the screen. The idea is to dodge them and lead them into traps in order to escape. Very tricky.

Almost there! Flimbo is getting close to the Professor's Castle. The laboratory assistants have let loose the dogs, dragons bats and Wylie E Coyotes... eh? Well, a Dutch sense of humour is worth a few bob as broken biscuits, as our old dad used to say.



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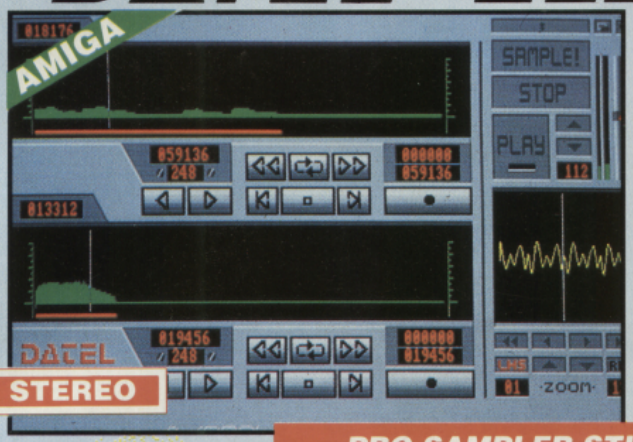

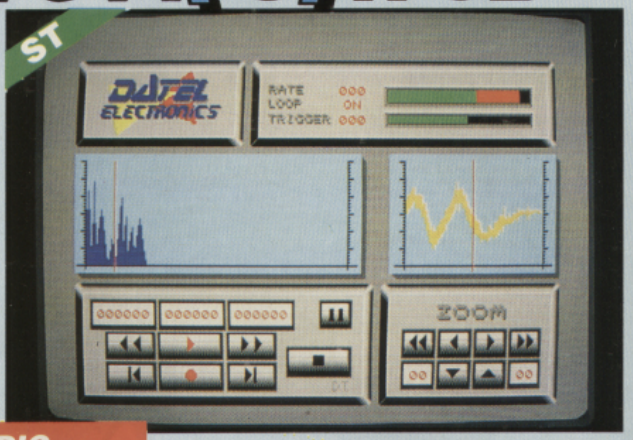

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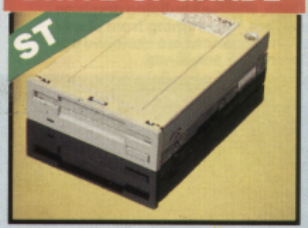

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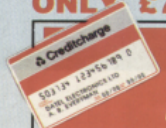

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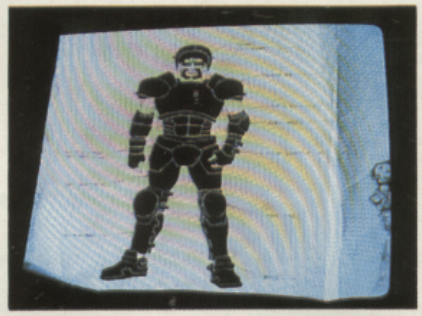
Speedball 2

What a year 1990's going to be for Brosettes. What with the arcade adventure Cadaver coming in June and a few other interesting projects in the pipeline, it looks like the Bitmap Brothers could regain their Programming Team Of The Year status. Gary Penn tackles the sequel to Speedball.



Because Speedball 2's even rougher 'n' tougher than the original, each player wears a battlesuit – a sort of futuristic American Football kit. Dan Malone's sketch highlights the helmet, shin pads, wrist guards and other pieces of body armour.

So why a sequel? "Popular demand," says Bros' Project Leader Eric Matthews. "And there were a lot of ideas that we wanted to put into Speedball but couldn't, so we're furthering those ideas and putting them in **Speedball 2**." These improvements include a proper league system, and a player management element which will involve the substitution of players and so on. But as Eric is quick to point out: "It's not good enough to simply produce a Speedball with a player manager element. We're putting in a lot of other things to make it different from the original and retain the playability."

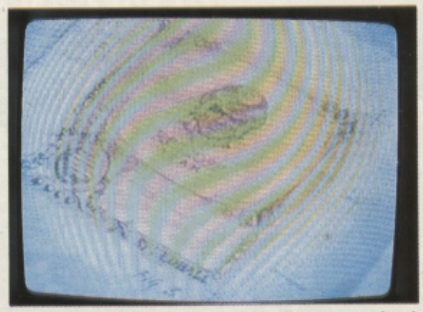
One of those other elements is the size of the pitch. The original Speedball scrolls vertically in two directions and is more akin to Basketball than anything else. Speedball 2 on the other hand has a larger pitch that scrolls in eight directions – apparently Bros has managed to perform some clever tricks on the ST. There are more players on the pitch, too, which all told makes Speedball 2 more like a futuristic variant of Football.

The man behind the impressive specification and its visuals is Bitmap Step-Brother Dan Malone. The former Palace person is a comic book artist by nature, which is why he provided the comic strip for Palace's **The Sacred Armour Of Antiriad** packaging and will do the same for Speedball 2.

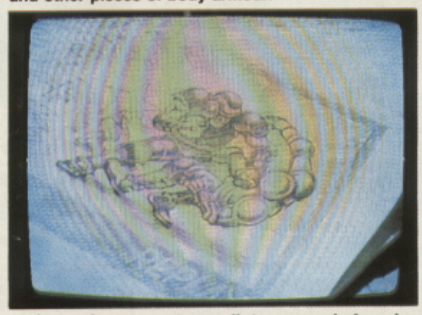
"The idea is that the sport's developed from before," Dan elaborates. "Speedball was very hi-tech, but this one's got a more 'Gothic' environment. There's a lot more to it now. You can take a character and build up a team – there's a choice of 20-odd players, each with different skills ranging from one to five stars. Basically you develop the character and the team – it can be extremely violent or a bunch of pacifists even."

Apart from being able to run, slide, kick, punch, and jump, the players will have more defined abilities, with attackers and defence having varying characteristics – like strength (which also determines how far they can throw the ball) and speed. Obviously the best strikers are the faster players, while the mean tacklers are perhaps best placed in defence.

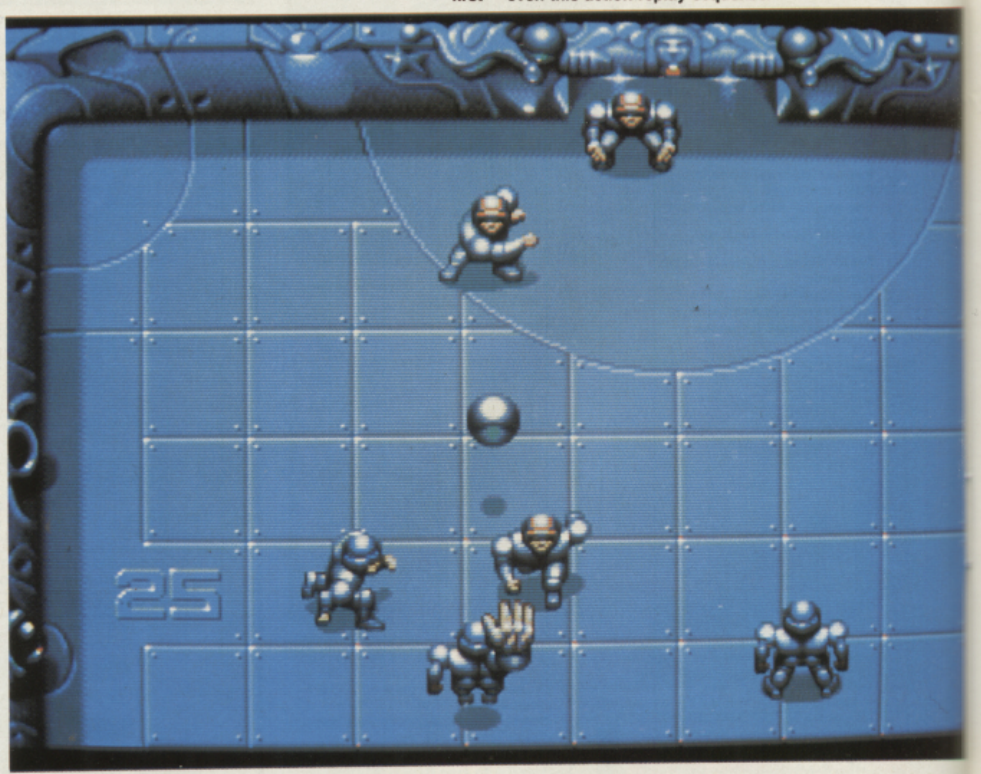
But it's not just a matter of creating differences between the two games – there are the different formats to consider. "We're working on the ST in 16 colours, then improving the Amiga to 32 colours. We want to make the Amiga version different from the ST – more machine specific. That's why the Amiga version will be in 32 colours. It's not something we've done in the past, but now we have the time. It should be something really special."



If you thought the original Speedball stars were hard – wait 'til you see these guys! They are so hard they eat tinned fruit for breakfast – and they don't bother opening the cans. This sketch shows how the Star Player selection screen could look.



Dan prefers to put pencil to paper before he manipulates a mouse... "It gives an overall picture of how it's all going to look, whereas building graphics on screen is less immediate." Everything from player to pitch and presentation sequences are sketched out first – even this action replay sequence.



Speedball 2's at an early stage of development, so there's little on screen other than Dan Malone's DPaint III mock-up of the game in play.

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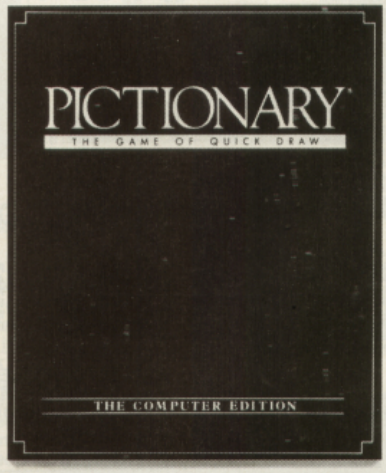

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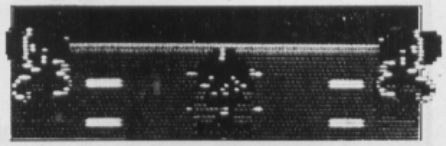
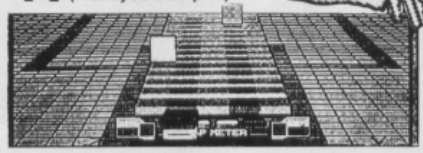
85 Castle Master (Incentive/Domark)



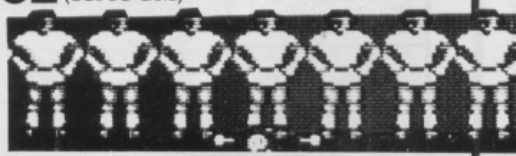
49 Cyberball (Tengen/Domark)

41 Escape From Singe's Castle (Readysoft/Empire)

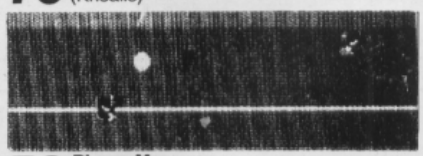


66 Klax (Tengen/Domark)

82 Knights Of The Crystallion (SSI/US Gold)



79 Manchester United (Krisalis)



53 Player Manager (Anco)

73 Ski Or Die (Electronic Arts)

THE ONE'S GUIDE TO PRICE, RELEASE DATE AND EVERYTHING

You may be used to reading reams of opinionated waffle elsewhere, but here we prefer to let the games speak for themselves. Relevant scenes are shown, with informative captions used to convey the 'feel' of the game in question. At the end of each review there are opinions highlighting any good and bad points, prices, release dates and ratings where possible. Basically, there's something for everyone – at best a highly detailed review, and at worst a highly detailed preview. There's nothing clever, just straightforward facts and ratings. Updates will follow where appropriate.

THE RATINGS

GRAPHICS Not necessarily how colourful or well drawn they are, but how well they fit into the overall effect.
SOUND Again, not necessarily quantity or indeed quality of sound, but how well it's used.
PLAYABILITY How does the game feel? Is it addictive or plain uninteresting.
VALUE Essentially a reflection of lasting interest – how much game you get for your money.
OVERALL A useful point of reference – essentially a summary of the preceding ratings.

WHO'S WHO

GARY PENN

The Ed's games-playing tastes are expanding faster than his waist measurement, with **Tetris**, **Rainbow Islands**, and **E.Motion** giving him his share of the jollies.

CIARAN BRENNAN

With poor old Ciaran up to his eyeballs in PC Leisure this month, he hasn't had much time for games-playing antics – but even so he's managed to squeeze in a couple of games of **Kick Off** (the game you can play between games without ruining your appetite).

GARY WHITTA

Tetris on the GameBoy has been eating into young Mr W's leisure time (and his battery supply), while **Klax** and **Rainbow Islands** have provided plenty of work-time disruption.

BRIAN NESBITT

It's been a busy month for The One's favourite man about town, with executive stress and the general turmoil of Big City life beginning to take its toll. He's nevertheless found time to get lost in **Klax** and **Castle Master**.

KATI HAMZA

Knights Of The Crystallion is Kati's flavour of the month, with **Kick Off** still proving the female phenomenon's favorite on the arcade side.

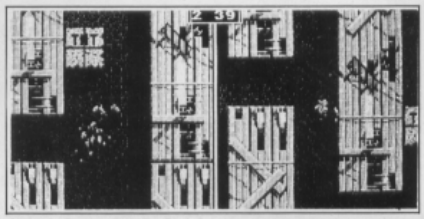
GORDON HOUGHTON

Good old Gordo has been getting lost in Domark's **Castle Master** of late, while **Kick Off** has been relegated to the second division in favour of the more strategic **Player Manager**. But how will the big man adapt to his new managerial position? Only time will tell...

SHELF TALKERS

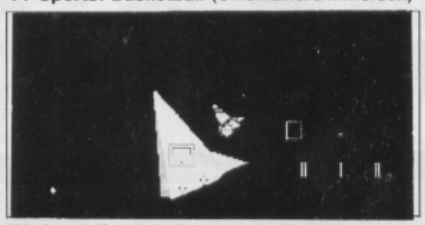
ESSENTIAL SOFTWARE OF THE LAST THREE MONTHS

Chaos Strike Back (FTL/Mirrorsoft)



Crack Down (US Gold)
Damocles (Novagen)
E.Motion (US Gold)
F–29 Retaliator (Ocean)
Midwinter (Rainbird)
Rainbow Islands (Ocean)
Super Cars (Gremlin)

TV Sports: Basketball (Cinemaware/Mirrorsoft)



Warhead (Activision)

WHAT THE STARS ARE PLAYING

THE BITMAP BROTHERS

Bros has just splashed out on its very own Pinball machine, called Eight-Ball Deluxe, which has up until now been eating into the lads' work schedules. Unfortunately (or should that be fortunately?) it's now broken so the boys have had to get back to work... New kid on the block Dan Malone is currently to be found leaping his way through Ocean's **Rainbow Islands**, while Eric and Steve have been pitting their wits against The One's **Pipe Mania** preview disk. Mike Montgomery claims he's been playing lots of things – he just can't remember what they are...

CORE DESIGN

The latest craze at Core, according to main man Simon Phipps is **Rainbow Islands**, which the team describes as "terrific". Also serving to infuriate and entertain is Gremlin's **Super Cars** – "It's a super little game," Simon says. "It's not exactly an original idea, but it's the first time it's been done properly. With all the excellent presentation, it's like **Super Sprint** times 10." Simon himself has recently got hold of an NEC PC Engine, which he's "well into" at the moment – the conversion of Irem's **Mr Heli** especially.

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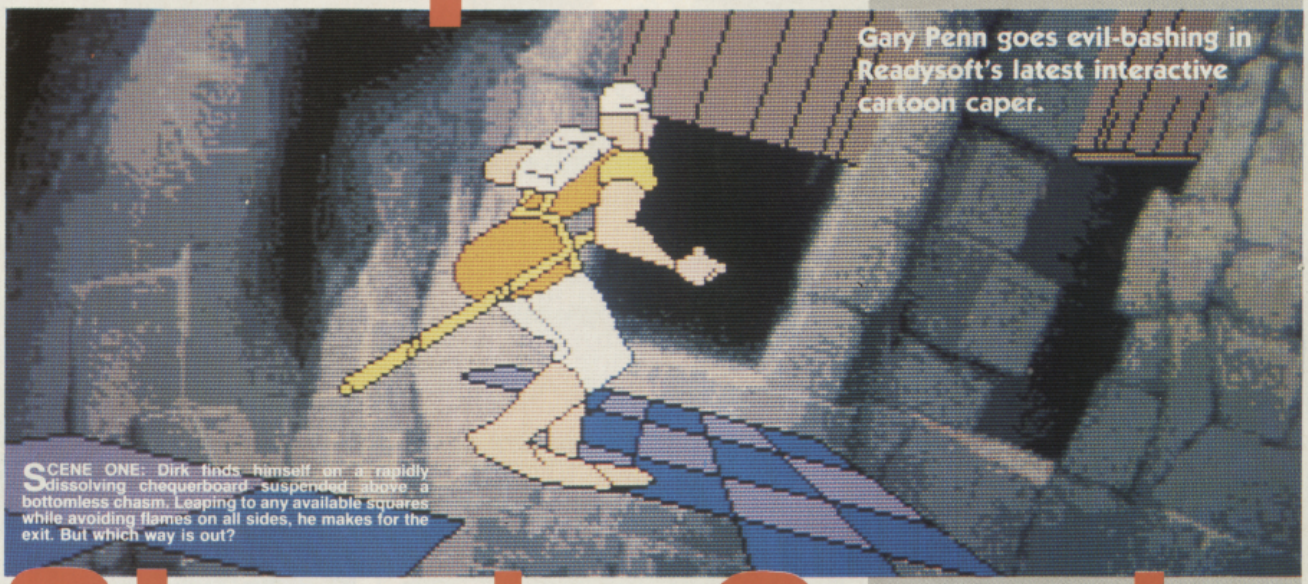
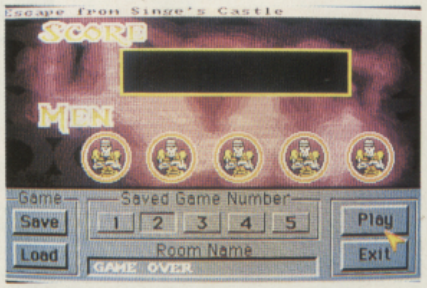
Escape From Singe's Castle

Gary Penn goes evil-bashing in Readysoft's latest interactive cartoon caper.



SCENE ONE: Dirk finds himself on a rapidly dissolving chequerboard suspended above a bottomless chasm. Leaping to any available squares while avoiding flames on all sides, he makes for the exit. But which way is out?



This is where it all starts – one of two options screens. From these you determine the number of lives to play with (between three and five) and play at one of three skill levels (on Easy you only play select scenes and don't get to meet the Shapeshifter, whereas on Hard you get to go all the way). You can also flip the rooms and play them in reverse for twice the fun (although not all scenes require left and right movements, and so some are to all intent and purposes identical), save and restore five previously played games, or activate the Helper – a mystical being who tells you the correct moves by means of a box at the bottom of the screen). But perhaps the most 'gear' feature of all is being able to link Escape From Singe's Castle with Readysoft's previous conversion of Dragon's Lair for "The Ultimate Playing Experience".

SCENE TWO: Dirk espies a strange–looking mount. Undeterred by its spooky nature, he hops up on top. Wooooooaaah! The beast springs to life and with a yelp Dirk is taken for the ride of his life. He somehow manages to steer his steed past four walls of flame before being unceremoniously dismounted.

Yes, you rescued the Princess Daphne from the clutches of the evil Singe The Dragon and disposed of him in the process in **Dragon's Lair**. Unfortunately, the scaly scoundrel has risen from the grave and once again whisked away your beloved. She now resides deep in his castle's catacombs, in the hands of the Evil Shapeshifter. Stepping into the breeches of Dirk The Daring for a second time, your task is to do battle with said Evil Being and save Daphne from her plight. But only after completing 11 new sections – most of which appeared in the original Dragon's Lair coin-op but were omitted from the conversion due to lack of space.

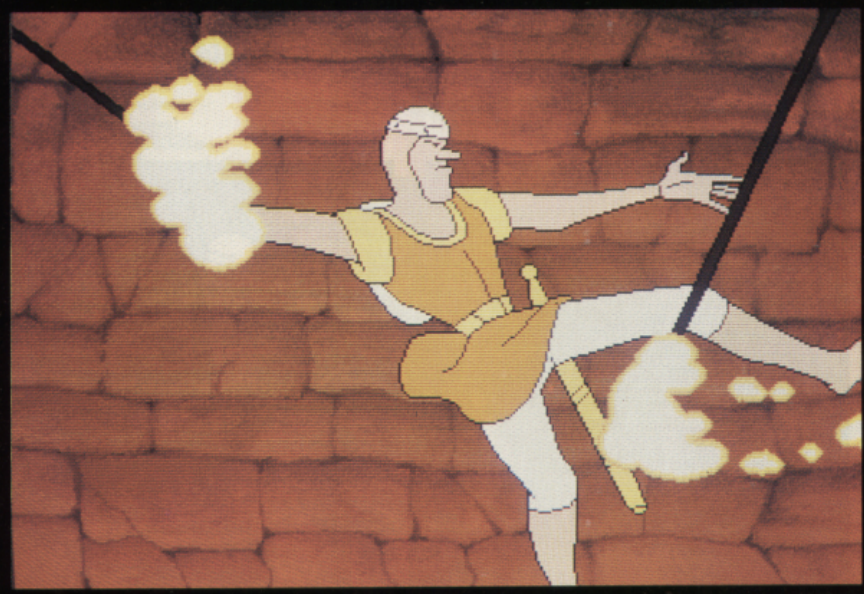
As in Dragon's Lair and **Space Ace**, the story unfolds in a number of animated sequences. You don't control Dirk directly, instead determining his general behaviour from five possible actions – up, down, left, right and fire. The timing of the execution of these moves is critical.

So what's new? Well, apart from a string of options longer than Dirk's sword, there's some copy protection to negotiate after the first section (although you only have to do this once every first load, so it's not so bad). This means that should you abuse Readysoft's trust and dish out copies to your mates, they only get a taste of the action in the form of the very first sequence.

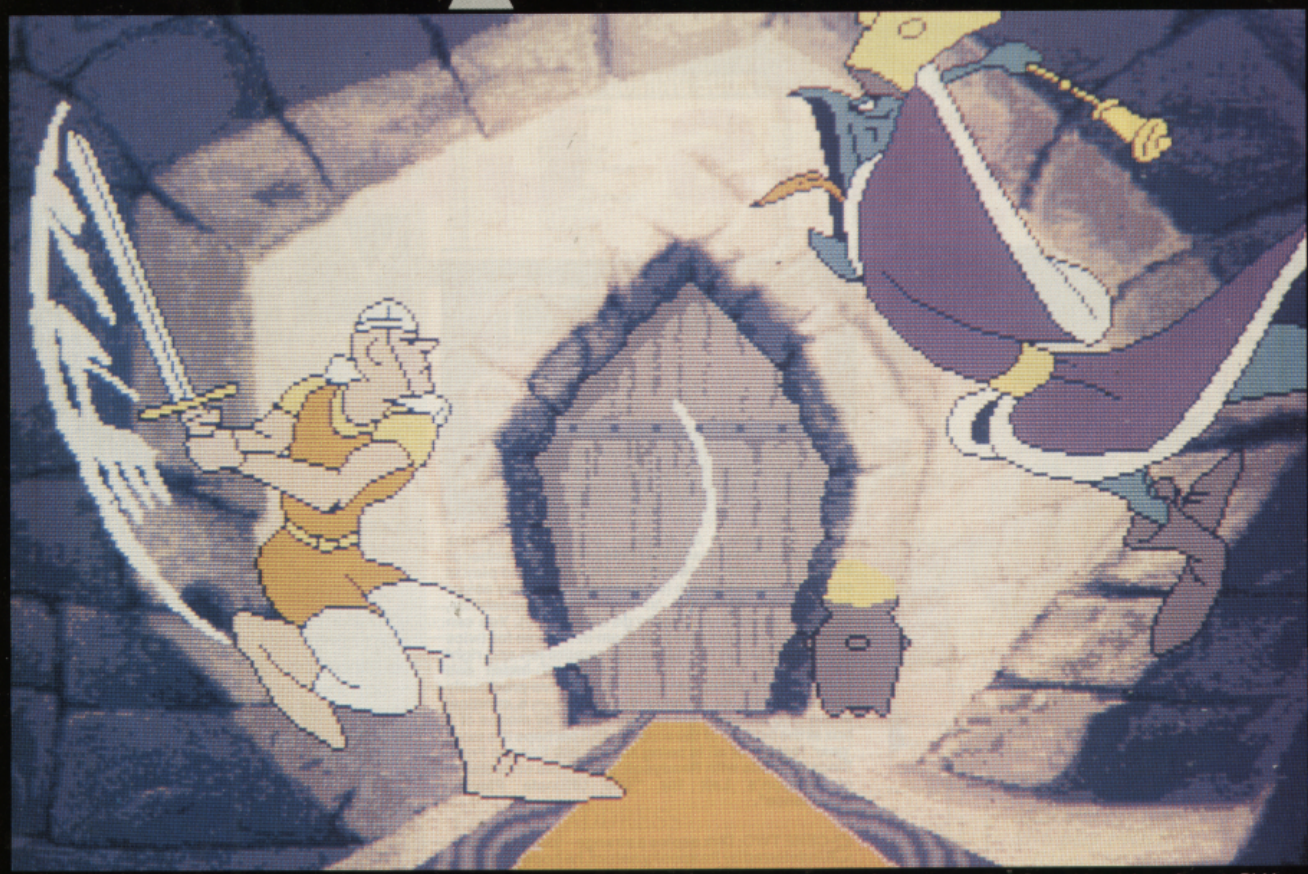
Lead on, Brave Adventurer. Your quest awaits!

SCENE THREE: Treading cautiously on a creaking walkway, it all seems seems too quiet for comfort. But then! Dirk springs into action as the planks crumble beneath his feet. He bounds onto the next screen, only to find a similar situation ahead. Not to worry – it's precarious but not never-ending.

SCENE FOUR: The Smithee. A mystical sword of energy comes to life and attempts to impress its point – through Dirk's chest! Having deftly avoided the weapon, the anvil comes to life and has a go at removing Dirk from the scene.



SCENE FIVE: Uh oh, Dirk mumbles. And you can see why! All that stands between him and the exit on the otherside of this flaming chasm are four flaming ropes. But they prove no match for the oldest high-flying swinger in town, and he's soon safe on the other side.

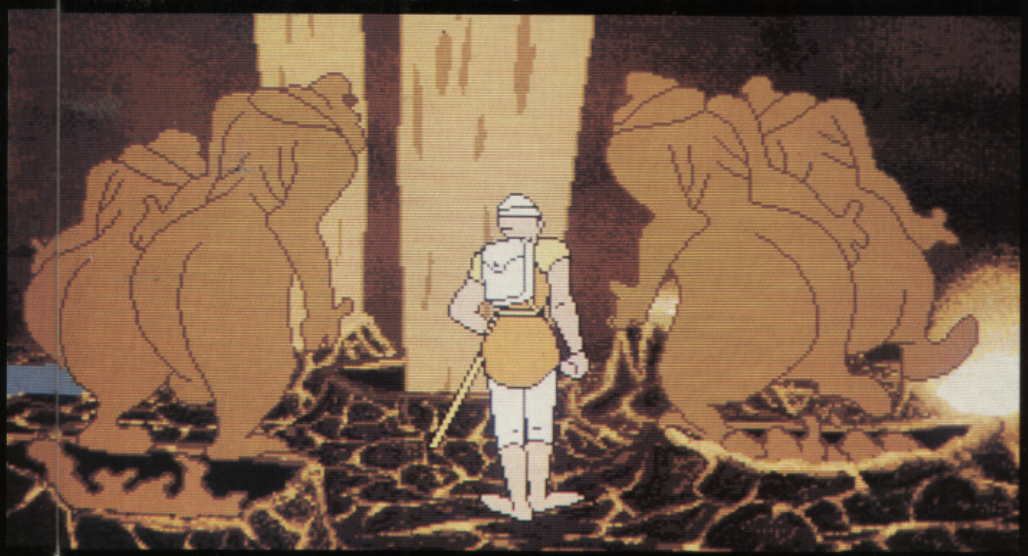


SCENE SIX: The Lizard King thinks that Dirk's after his treasure, and so sets about beating our hero with his mace. A magnetic floating cauldron takes a fancy to Dirk's sword, and so he gives chase – with the Lizard King hot on his heels. Regaining his weapon and his senses, Dirk eventually gives the regal reptile what for before leaving through the door.

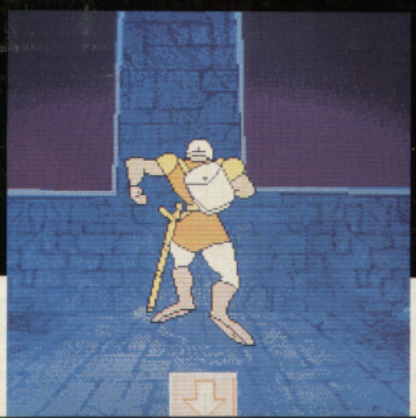
SCENE SEVEN: All is not what it seems in Singe's Castle. Even the door knockers want a piece of the action – and Dirk with it! Quick feet and devilish sword-wielding save the day.

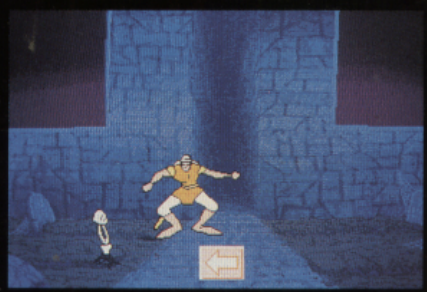
SCENE EIGHT: Dirk pokes his head through a trapdoor – the coast is clear. He climbs up and out and is about to take the stairs when trouble rears its ugly head from behind... Screeching like baboons, the Goons snap at his heels – but Dirk's swish swordplay and flighty feet see good his escape up the staircase and through the exit.

SCENE NINE: With the sound of boiling mud in his ears, Dirk enters a strange, subterranean cavern. A geyser gushes forth taking him by surprise, and right on cue the dirty old Mudmen appear from the craters. But Dirk's no fool – he's outta here, hot-footing it (literally) through the exploding surroundings.



SCENE TEN: The Labyrinth. The route through this maze is difficult to find at first, and the exit is more often than not reached by luck rather than judgement. A bridge awaits at the end. As Dirk crosses it, skeletal hands make a grab for him. Thrifty footwork avoids the danger.





SCENE ELEVEN: What's this – another maze? 'Fraid so. But the Evil Shapeshifter awaits at the other end, ready for a duel to the death – preferably his.

REVIEW

A Here we go again. A third collection of mildly interactive animations to astound and delight... for an hour or two. Despite continual tweaking from Readysoft, this is one game system which is destined never to improve beyond the realms of reasonable. Well, not in the foreseeable future, at any rate. The extra gameplay options provided are actually detrimental to the proceedings. It's too tempting to make life too easy for yourself with extra lives and the Helper pointing the way (it's no use towards the end, as the power of the shapeshifter weakens the Helper and destroys it before your final encounter – but that's still the best part of the game completed by the time the pointer goes haywire!). Apart from the top-notch animation and sound that's expected of these laser disc conversions, Escape From Singe's Castle features atmospheric juddering and scrolling scenery to add to the film-like feel. Sadly, it fails to compensate for the short-term entertainment on offer. There's just not enough interaction to provide genuine playability. Like its predecessors, Escape From Singe's Castle is an experience for spectators rather than participators.

PRICE	£44.95
RELEASED	Out Now
GRAPHICS	93%
SOUND	88%
PLAYABILITY	44%
VALUE	30%
OVERALL	**58%**

ST Readysoft's wares have been a bit thin on the Atari ground – Dragon's Lair has yet to appear, and yet Space Ace is out and about! Escape From Singe's Castle is due sometime in the third quarter of this year, ie: Autumn, at a price of £24.95. It should be nearasdammit identical to what's seen here.

PC Dragon's Lair is out at last, and Space Ace isn't far behind. However, MS-DOSsers keen to escape from Singe's castle will have to wait a few months. The sum of £44.95 buys you CGA, EGA, VGA and Tandy compatibility on either 3½" or 5¼" formats.

Pipe Mania!!

ADDICTION BEYOND BELIEF!!

C and VG Feb 1990 94%

Pipe Mania is "a classic puzzle arcade game that is so addictive, it should come with a Government Health Warning!"

Pipe Mania is a game of great ingenuity, simple in concept and friendishly challenging to play.

You'll need to act instinctively, but think strategically!

One wrong move, one brief hesitation or mis-placed pipe section, and you'll drown in a sea of slime!

ST Action

"Pipe Mania is a conceptually simple and cheeky game which is incredibly addictive"

Commodore User Screenstar

"Terrifically addictive... outlasts any arcade conversion"

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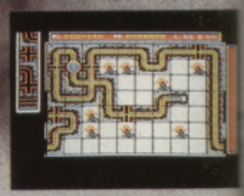

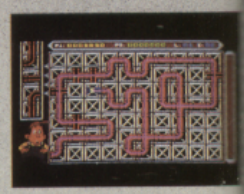

Zero March 1990 92%

"Buy this game and you may never sleep again"

The Games Machine Star Player Award 83%

"A puzzle game of great ingenuity and addictivity, Pipe Mania is simple in concept, fiendishly challenging in play, and attractive to look at"

Zzap Sizzler

"Absolutely guaranteed to drive you round the bend"

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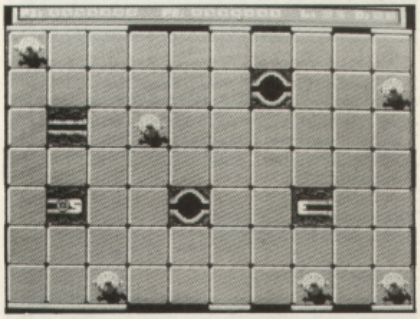
TIPS

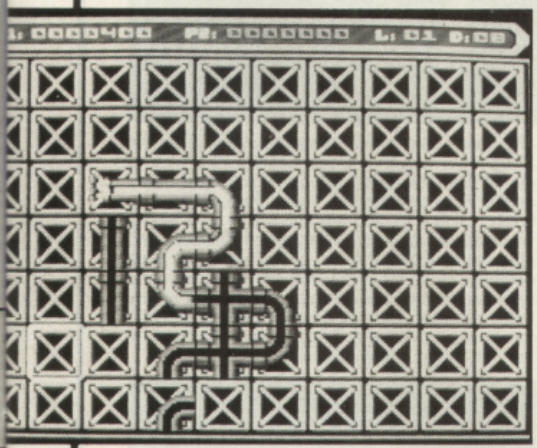
- FUTURE WARS: The Final (Time) Piece!
- PIPE MANIA: Join The Piece Makers!
- THE NINJA WARRIORS: How To Mangle Bangler!

PIPE MANIA
(Empire)

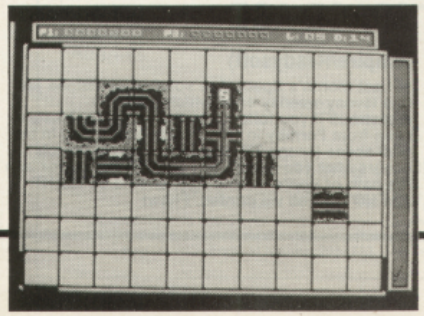
The Assembly Line's John Dale lays down the law (along with several sections of pipe) for this innovative puzzler.



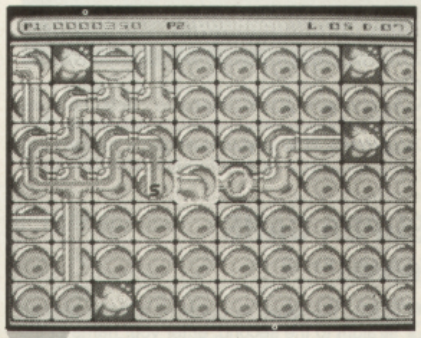
Contrary to popular belief, the pipe pieces are NOT dispensed at random. The program has a list of pieces for every level, and it uses extracts from the list every time you play that level. On higher levels there are more One Way pieces, and more repetitions of a particular Bend piece – typically the one you have no use for at all right now.



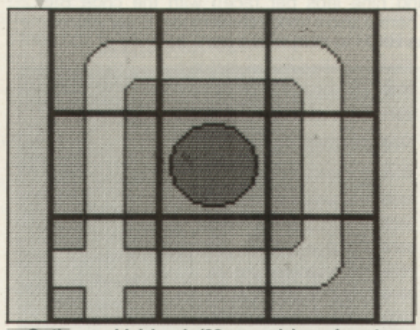
Put Cross pieces down in an area with plenty of space so you can use up Bend pieces to make a loop and join up to it. All too often lots of Bend pieces come up just when you have no particular use for them, but if you have a Cross piece with lots of space around it, you could use them up there.



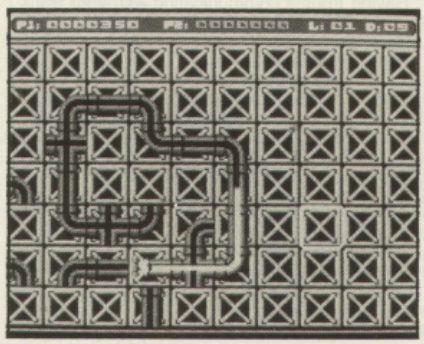
It's impossible to finish the higher levels without leaving gaps in your pipeline and coming back to them later. You have to plan out in advance where you want your pipeline to go. Check out the positions of reservoirs, bonus squares and wraparounds, then put pieces down way ahead of where your pipeline is at the moment, so you can join up to them later.



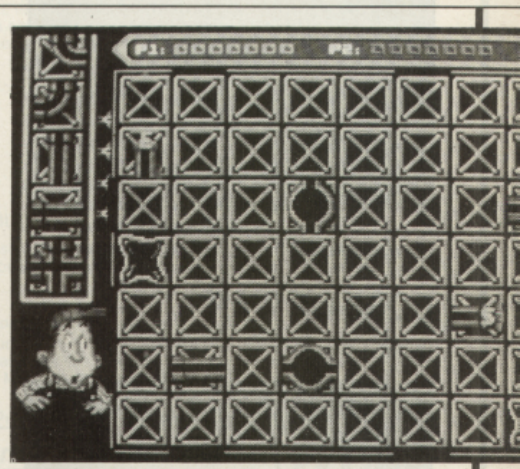
Use crosses to skillfully go around obstacles like this. It's a great spacer that comes in handy on later levels.



On the very high levels (30 upwards), you have to go through the bonus peices not just for the points, but in order to get the minimum distance – there just aren't enough empty squares. In fact, in an early version of the game, we had so many dead-end squares on the last level that our publisher eventually pointed out that even if you filled every square, you still couldn't get the minimum distance!

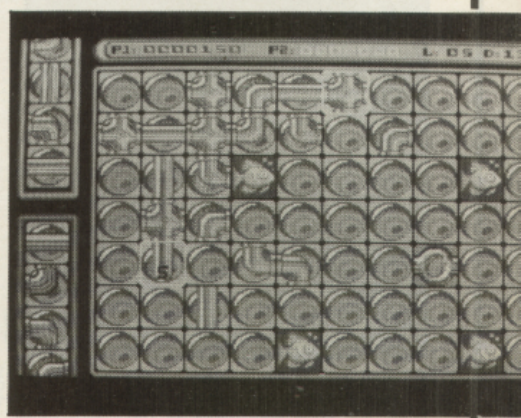


On higher levels there are pieces that only work one way, as indicated by an arrow on the pipe piece. Try to make the flooz flow the wrong way through this pipe and you lose.



In the first half of the game, there are no end squares – all you have to do is get the minimum distance. For level 16 onwards, alternate pairs of levels have an end square and the pipe must not only go the minimum distance, but also be connected to the end square as well. It's tricky to get both aspects correct – you can create a really long pipe, only to find you can't get it connected to the end square, or manage to connect it up, and then realise that the pipe is just too short to qualify. It's a good idea to join a few pieces onto the end square facing AWAY from the start square early in the level, just to make sure that you are forced to go that extra distance to win.

In two-player mode, each player gets points for their own colour pieces, so if you are particularly sneaky you can let the other player make their own structure, then at the last second before the flooz hits the bulk of their bit, divert it into your own structure – preferably one with lots of high-scoring loops.



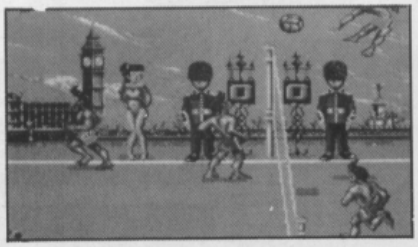
OH, AND ONE MORE THING...

The ST and Amiga versions feature two secret bonuses that aren't referred to in the manual – or indeed anywhere else. One involves the Cross pieces, and the other involves super-extra-long-distance pipelines. You can't mistake them when you see them...

TIPS

BEACH VOLLEY

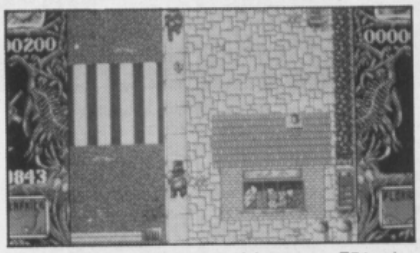
(Ocean)



At any time during play, type DADDY BRACEY to activate the cheat mode, then hit F1 to skip levels.

DOGS OF WAR

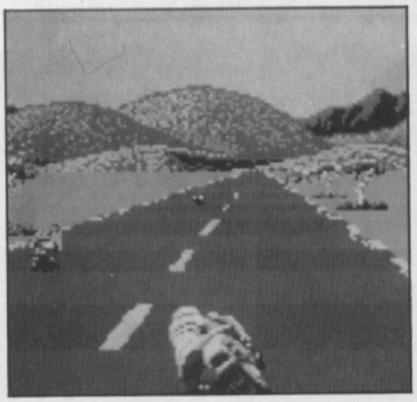
(Elite)



Type TIMBO at any time, and then press F5 to give both players invulnerability.

SUPER HANG-ON

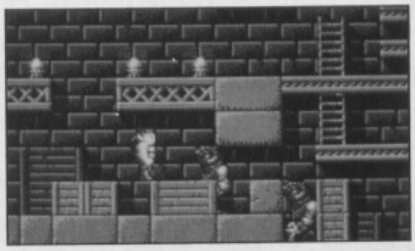
(Electric Dreams)



Finish any of the courses with a score high enough to put you in first place on the high score table, and enter your name as 750J. When the game reverts back to the title screen, hold down CTRL, LEFT ALT, Z and T together until the screen goes blank. Then start a new game (change the settings to 00) and you should find that it's impossible to skid or slide off the road. For something REALLY special, hit the LEFT AMIGA (or COMMODORE) key to let rip with a burst of machine gun fire and take out any bikers in front of you!

SWITCHBLADE

(Gremlin)



Get onto the high score table and enter your name as POOKY (the same cheat mode as Core Design's previous platform escapade Rick Dangerous). Now in your next game you can use keys 1, 2, 3, 4 and 5 to skip through parts of the level!

SUPER CARS

(Gremlin)

To skip the races in the third division and go straight to the second, enter your name at the beginning as ODIE. If you really want to go in at the deep end, you can start in the first division (nine cars and nine laps per race!) with the code BIGC. There's also a handy cheat mode. Enter your name as RICH to start with a bank balance of 500,000!

Having trouble communicating with your Bank Manager? Here's a list of handy phrases he should understand...

I could murder a curry!
Does the infuidulator work?
I ought to knock your lights out!
Too much!
I think it's started raining!
How much!
I've got a cat called Garfield etc etc...
Does it come with a guarantee?
How's the sub-frame?
Are you trying to rip me off?
Is it fitted with CAT?
Hey, I am paying cash!
This parrot is dead!
Make me a better deal.
I'm a lumberjack!

NB!
If he mentions Monty Python or Garfield, always use associated phrase.

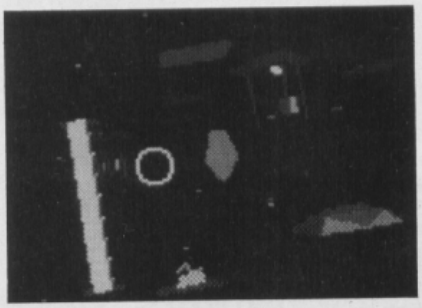
X-OUT

(Rainbow Arts)

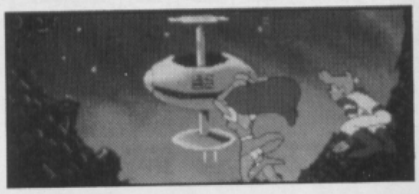
Short of cash? No problem. At the start of the game, in the shop, select the smallest ship (the one at the top of the list). Now select the weediest laser (the orange one with a single beam) and place it directly over the shopkeeper's nose. Hit the fire button and your bank balance is boosted considerably!

INTERPHASE

(Image Works)



A handy little 'cheat' mode as supplied by the game's designer Dean Lester. At any time during flight, type Fenny (note – you must use a capital F) to activate the 'cheat'. As soon as you finish typing it in, you are taken into view mode, which allows you to cycle through all the aliens and objects in the game. As an added boon, you have complete mouse control over them – you can make them rotate and zoom in and out of the screen (by holding down the left-hand button in conjuction with the mouse movement). To go to the next object, hit the right-hand button.



SPACE ACE

(Empire/Readysoft)

◄ Last month's Space Ace solution contained just one teensy-weensy error which could be disastrous if you follow it to the letter. As Alastair Lean from Formby in Merseyside points out, in the final scene (scene 33), the second move, which occurs after you move LEFT to push the mirror into the path of Borf's Infanto Ray, should be RIGHT and NOT left as we printed. Phew!

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Cyberball

If you thought American Football was tough, how about playing with 20-foot tall robots? Gary Whitta's on the ball with this Domark conversion of Atari's futuristic sport simulation.

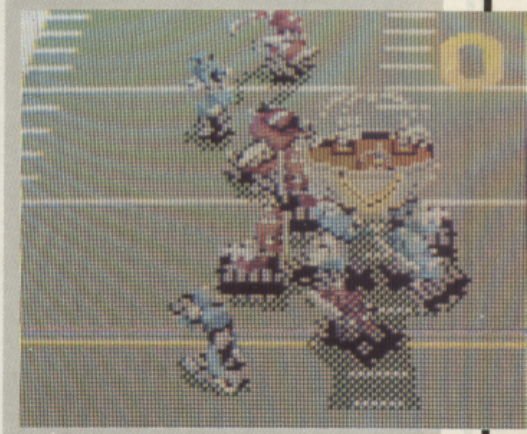
It is the 21st Century. Recent drastic advancements in the world of bionic and cybernetic surgery mean that steroids are a thing of the past, and 'guilty' sportsmen instead choose to have limbs replaced with stronger, faster and longer-lasting artificial appliances. This bionic abuse is most widespread in American Football, where strength and speed is everything, and more and more players become sporting Steve Austens. Little did they know that one day they'd all be out of a job.

In November 2015, when Pittsburgh takes the drastic step of fielding the world's first totally-automated player and goes on to demolish the opposition, other teams begin to realise the value of completely cybernetic players – and quickly follow suit. Before long virtually every team in the league is completely robotic, and when the last human player ever to participate is decapitated during a game, the game comes under review, and is renamed along with a new set of rules. Now, in 2022, the only humans left in the League are the managers – there are no need for coaches anymore, and referees are redundant as the droids are programmed never to infringe the new, revised rules.

Most of the rules of American Football remain intact, but there have been a few major changes to suit the new bionic participants. The ball still has to travel a set distance up the gridiron, but it's no longer ten yards. Instead it has to reach a point known as the Defuse Line to complete a First Down. After the initial kick-off the Defuse Line is placed in the middle of the field, on the 50 yard line, and when this is reached it's moved to the Touchdown line. Don't be daunted by the prospect of making 30 or 40-yard plays – the robot super-players are capable of running and throwing further and faster than their frail human predecessors.

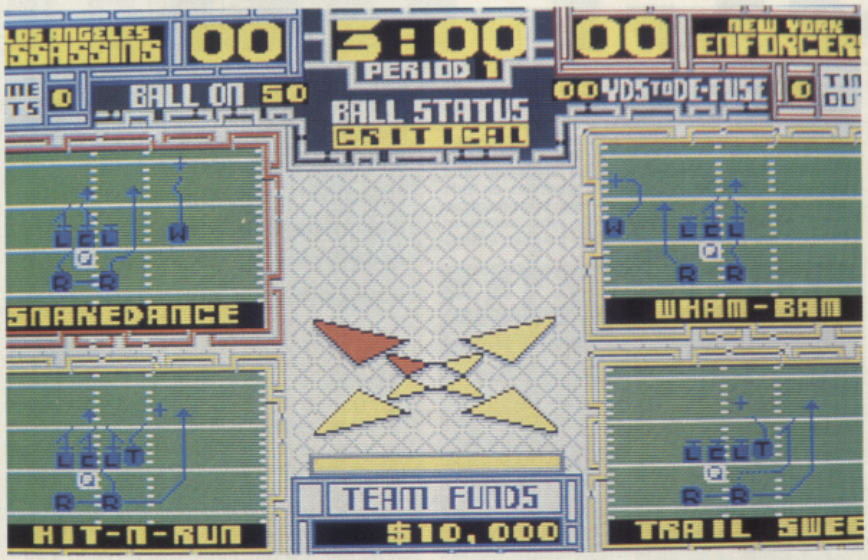
Money is vital. Starting with 10,000 dollars, you earn extra cash by making successful plays, touchdowns, and by winning games, allowing you to buy replacement players. The robots are designed specifically for different tasks, like Quarterback, Running Back, Cornerback, Wide Receiver, and Linebacker. A brief rundown is provided on this information screen. When you come to buy one of the many different available models, the computer chooses the most expensive model you can afford.

Just to make things even more hairy, the traditional pigskin ball has been replaced by something a little more interesting – a steel ball three-foot in diameter packed with high explosives! The innovative 'bomb ball' gives a team four attempts to take it to the Defuse Line. The ball starts cool, and for each play you make without reaching the line, it gets hotter and hotter, eventually reaching Critical Mass and exploding – taking with it the player in possession! When the Defuse Line is reached, the bomb is deactivated and play begins again with the ball returned to cool status.

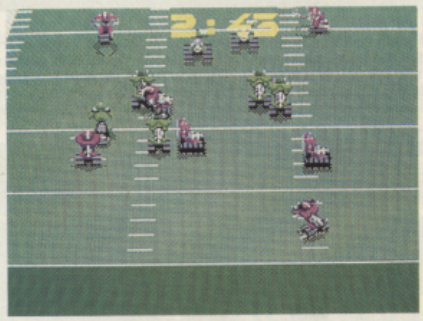


Players destroyed by constant tackling or the ball exploding are quickly beamed out of play by an orbiting clean-up shuttle so that play can proceed.

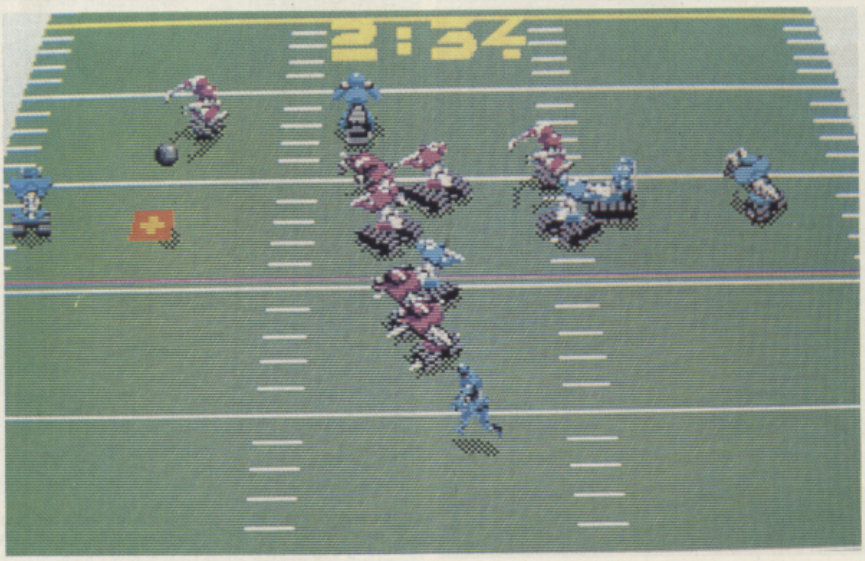
With well over 100 plays to choose from, Cyberball is quite capable of holding its own in the strategy stakes. Having selected a style of play (Running, Passing or Option for Offense, and Long, Short or Medium for Defense), the computer takes into account your situation – where you are on the pitch, whether you are on Offense or Defense and so on – before providing a choice of the four most suitable plays. So you don't have to work blind, a comprehensive playbook in the package provides a rundown of every play. In keeping with the game's tough nature, all plays have suitably 'hard' names – like Zonebuster, Afterburner, Power Surge, and Assault Wave.

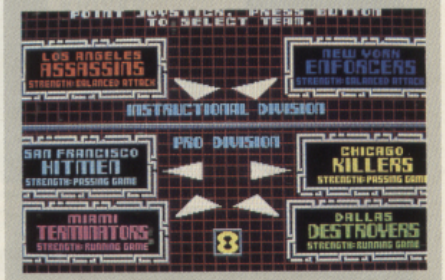


Running plays are easy to pull off, but don't cover much ground as the turbo-charged Defense is normally too quick to contend with. Passing plays on the other hand are a good deal more risky but yield better results – the robot receiving the pass is more often than not in open space for a run to the Defuse Line. Receiving players aim to collect the ball at the chosen flashing cross on the pitch. The ball may well be intercepted if it's thrown too soon – release it too late and the Quarterback simply gets sacked.



Your work's cut out for you on Defense – even with so many plays to choose from. Again, you only control one player while the rest follow the chosen play, but this time you have an ace up your sleeve in case of emergency... A short burst of turbo power rockets you across the pitch and tackles a player (if, for example, he's racing towards the Defuse Line). You only get one boost per play, so use it wisely.





The six major teams in the ICBL (International Cyberball League) each have their own particular offensive strength – some are strong on passing, some excel at the running game, while others have a balanced attack. But no matter who you choose to play, you end up with a pretty hard–sounding team. Forget Cowboys, Stealers and 49ers – here it's all Enforcers, Terminators, Destroyers, Killers, Assassins and Hitmen. Not the kind of boys you'd take home to meet your mother.

A

Any gap in the American Football simulation genre has just been filled by Cyberball, with its novel futuristic twists and arcade-style approach. Don't be put off by the fact that it's a coin-op conversion: the variety of plays are strategically competent – more so on occasion than most down-to-earth American Football games. The visual reproduction is good, although unfortunately at times the player are comparatively sluggish. What really stands out however, is the sound – a 'meaty' futuristic title tune and atmospheric sampled effects during play, including a female commentator whose sexy voice announces over a PA system the result of a play. Cyberball's only real minus point is the fact that you can't play against another player – the best that's available is two people playing as a team against the computer. Surely a four–way joystick adaptor could have been put to good use for all the options of the original? Nevertheless, this is a unique, entertaining and satisfying variation on the American Football theme.

PRICE	£19.99
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GRAPHICS	78%
SOUND	85%
PLAYABILITY	79%
VALUE	78%
OVERALL	**79%**

ST

Understandably this also looks and behaves like the original, and although the sound isn't as strong, Cyberball is no less rewarding to play. It's in the shops now at a price of £19.99.

PC

Looks and plays fine, with VGA, EGA, CGA, Tandy and Hercules all supported – unfortunately, the popular sound boards are not, so it's bleep city in that department. Out now at a price of 24.99 on either 3½ or 5¼ formats.

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RAF Pilot Officer David Crook.

"There were about twelve Me 109s diving at me from the sun and at least half of them must have been firing deflection shots at me. There was a popping noise and my control column became useless. I found myself doing a vertical dive, getting faster and faster. I pulled the hood back. I got my head out of the cockpit, and the slipstream tore the rest of me clean out of the machine."
RAF Pilot Officer Stevenson.

"There isn't much time to muck about in a head on attack. I gave a short burst then slid underneath his big black belly with only feet to spare, and flashed through the rest of the formation. I hadn't meant to cut it so close, and instinctively ducked as I saw wings, engines, cockpits and black crosses go streaking through my hood. I had reached about 450 mph in my dive, and heaved back on the stick. I blacked out completely as I went up and over in an enormous loop."
RAF Pilot Officer Boggle Bodie

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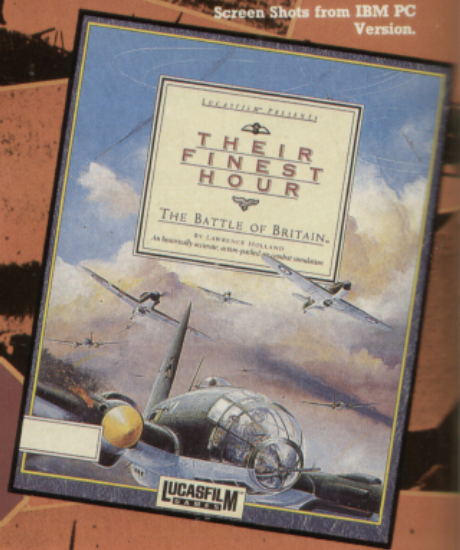

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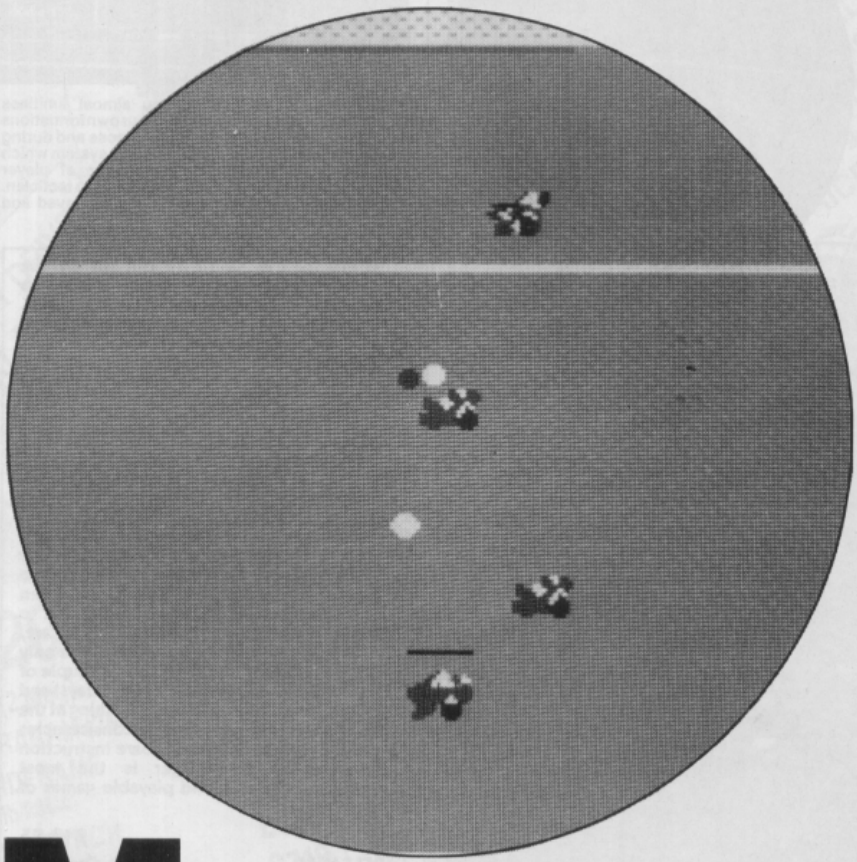


Gordon Houghton's got a mountain to climb. But at the end of the day, football's the winner out there. The boy Anco's done good – again!

What have Brian Clough, Allan Clarke and Bobby Charlton got in common? They were all prolific goalscorers who went on to manage lower division clubs. Anco's **Player Manager** assumes that you want to do the same: as a successful International class forward, you take the plunge into anonymity as head honcho of a Third Division team of toe-poking no-hopers.

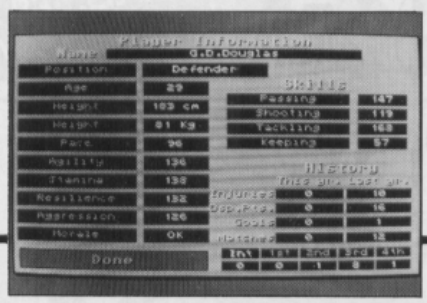
Your charisma is such that you can generate a whole league and rename the club before you start. After that, it's a baptism of mud in the rough and tumble of lower league life. Management is an ephemeral profession: run out of money or displease the board and you end up queueing with your UB40.

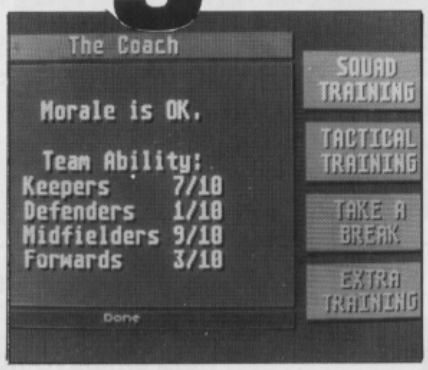
Life as the Boss begins here. Check out the squad, look at your position in league and cup, help the coach train the players, devise new tactics, snap up talent in the transfer market, visit the board room to examine club records, finances and your management rating, play a match and save the game.

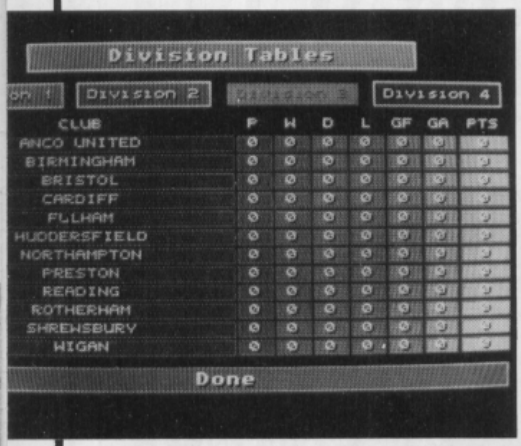
There are over 1000 players throughout the four divisions, and you have inherited this bunch of 18 moderately-talented ancients and innocents. They come in a wide variety of sizes, abilities and ages, and are easily upset if you don't put them in the first team or if your league position starts to slip.

Each player has a unique set of skills and attributes which change over time and determine match performance. Apart from the standard physical qualities (whose average rating is a duff 100), there's morale. This is boosted by taking a break from training, or giving a match to a squad member who's feeling left out. As players grow older, skills fade and fewer clubs are interested in buying them: when to transfer an over-the-hill star is one of the hardest decisions you have to make.

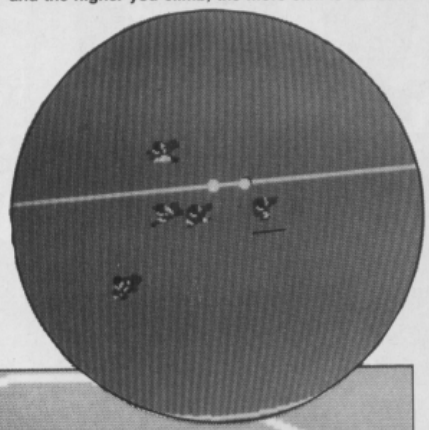
An individual's status screen details injuries, disciplinary points, contract record and transfer position. Players are put on the transfer list at their own request (if they are unhappy) or at your command (in which case you dictate the selling price based on the board's recommendation). The only exception to this formula is yourself: you alone decide when it's time to 'hang up boots'.

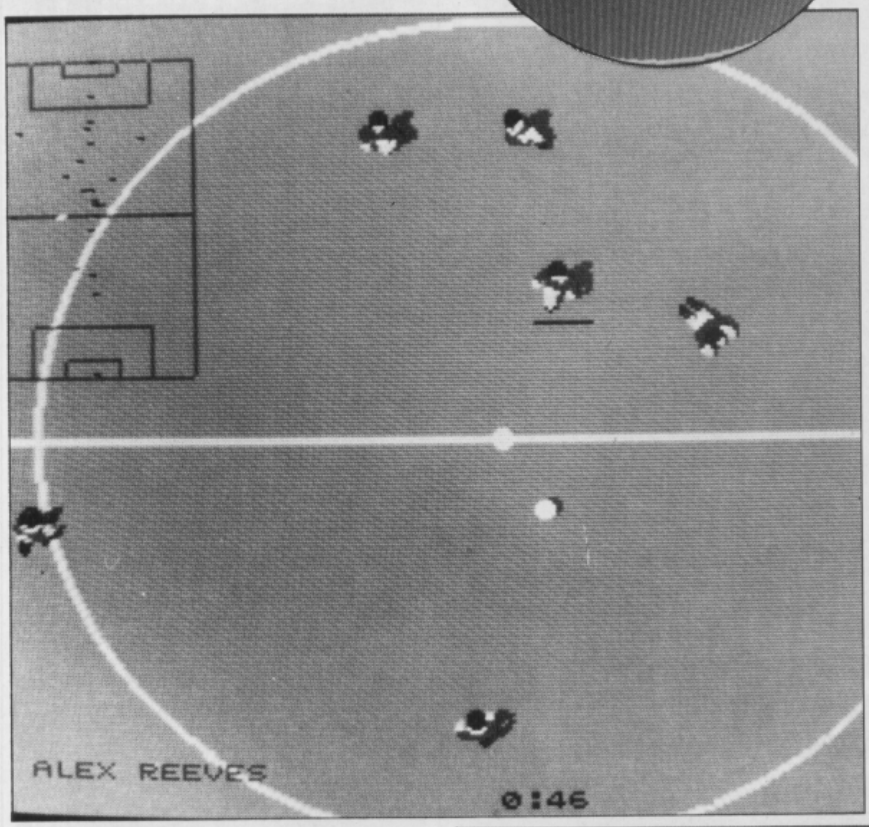






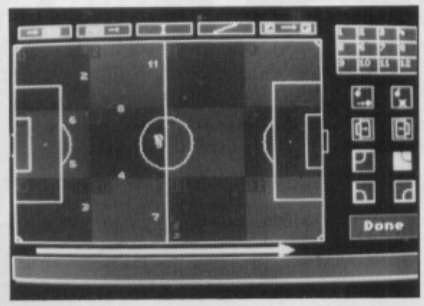
At the start of every week you can view your progress in league and cup, as well as noting the success of all the other teams in the league. It's hard to be relegated, but it's equally tough to gain promotion – and the higher you climb, the more skill is needed.





Playing a game involves crucial decisions. Your first task is to check out the opposition's strengths and weaknesses and then assign the players you think best suited to tackle them. The match proper is played in one of three modes: result only, fast (an enlarged scanner display showing an accelerated game) and normal. Normal is a standard Kick Off match played out over six minutes, with differing playing surfaces and wind factors.

Disappointed with your squad? Then gamble in the transfer market for fresh players – the more you are prepared to pay, the better the quality. The only trouble is getting the board to splash out: unless the finances are very healthy, they prefer you to buy moderately-priced players.



The tactics option allows you almost limitless opportunity to design and plan your own formations and player movements, both at set pieces and during the normal flow of play. It's an intricate system which depends as much on your knowledge of player abilities as it does on your creative skills as a tactician. Once you are satisfied, designs can be saved and loaded for use during a match.

ST

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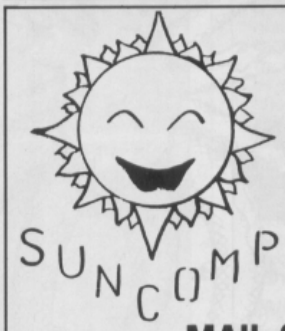

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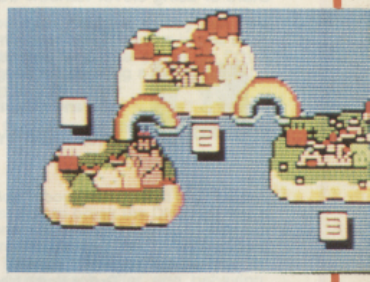
Rainbow Islands



First revealed by The One over a year ago, and reviewed six months later, Rainbow Islands has only now been released. In the first part of this extensive Players Guide, the team behind the conversions, Graftgold, takes you through the basics and reveals what's what with the first of the seven islands.

THE STORY

The Official Story According To Taito...

Bubble and Bobble, who were turned into 'Bubble Dragons' by a wizard, went into the cave of a witch seeking their sweethearts, Betty and Patty. After a long battle and finally getting 'Super Drunk', they could not believe their eyes when they saw their Mom and Dad.

"Dad! And Mom!..."

Big tears were coming out of Mom and Dad's eyes. Bub and Bob were so happy after saving them, not only Patty and Betty, but also their Mom and Dad. All of sudden, they were back to normal again.

"God, thank you..."

But they were not completely satisfied until they found the real enemy, who turned their parents into 'Super Drunk' and controlled their minds. There is a real enemy still hiding and waiting for Bob and Bub. They knew that sooner or later they had to face him.

Many years have passed. Bubby and Bobby grew up to be fine boys with power of 'Magic Rainbows' given by Mom and Dad. When they went back to their birth-place to search for treasures, they became involved in a mystery. They went to look for the real enemy, 'Prince Of Darkness'. He has a large following who are in Bubby and Bobby's way. The final day to face the Prince Of Darkness came. Why don't you play the game to find out? The secrets are waiting to be discovered. There are many puzzles you can challenge! Who will be the real winner?

LOOSELY TRANSLATED...

What all this means is that you have to negotiate seven Rainbow Islands. Each island is split into four vertically-scrolling platform-filled Rounds which increase in height throughout. You start at the bottom of a Round and the idea is to get to the Goal Line at the top. When you eventually reach the seventh island you have to confront and defeat the enemy within to win.

The numbers on the right-hand side of the Rounds represent restart positions: 1, 2, and 3. When either character dies, they are returned to the last restart position passed. To give you time to get your bearings, they flash for five seconds, during which time they are invincible – so make the most of it!

BUBBY AND BOBBY

These versatile little fellows start with three lives each. An extra life is awarded when you first reach 100,000 points, and thereafter you only get one extra life at 1,000,000 points. There are other secret ways of getting extra lives, but these won't be revealed until a later issue.

The boys' repertoire of skills is impressive: they can...

WALK

They stroll at one of two speeds, depending on whether the Training Shoe is worn. Bubby and Bobby can walk over platforms or rainbows – even the bad guys (but only when invincible).

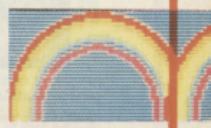
JUMP

Bubby and Bobby can jump at one of 10 different heights, depending on how long the joystick is held in the jump position. Just for the record, the height varies between 20 and 64 pixels, so you get a rough idea of just how high you can try.

Bobby and Bubby always jump at least as high as their own height, and only stop when the maximum height is reached. Even when falling, you can hold the joystick in the jump position so that should they land on a rainbow, they jump off it rather than break it.

FIRE RAINBOWS

Bubby and Bobby throw a Magic Yellow Star in an arc which leaves a rainbow in its wake. The star follows more arcs when the Red Potion is taken. The star explodes when the last rainbow is completed.



FALL

Bubby and Bobby can fall any distance without getting hurt (well, unless they land on a bad guy or in the water). They flap their arms to slow their descent, allowing you to steer them as they fall.

BUT THEY CAN'T SWIM

So don't let them drown!

THE INHABITANTS OF INSECT ISLAND

There are six different creatures on Insect Island. Like most of the inhabitants of the Rainbow Islands, the Insects usually start in a happy state. That's not to say you can shower them with kisses – they don't like short, fat intruders.

Eventually the creatures get angry, either after approximately 12 seconds (or less on later islands) or when the 'Hurry!!' message appears. Every enemy generated after this appears will be angry.

Up to 16 enemies can be on screen at any one time. However only a maximum of six can exist if there are any other objects on the screen (like Bonus Objects), so use this to your advantage.

Occasionally enemies stray too far and disappear off the top or bottom of the screen. They hang around for approximately five character lines before disappearing, which means you can actually kill them even though they are not on screen. The same is true of any gems and the like lying around.

Killing any one creature is worth 1,000 points (well, except the Bosses, who surprisingly aren't worth anything!). Killing two creatures simultaneously is worth 2,000 points (indicated by the large 2,000 rising from the player). Kill three creatures simultaneously and you get 4,000 points, four are worth 8,000 points, five 16,000 points, six 32,000 points, seven 64,000 points, and eight a massive 100,000 points! Exploding Red Stars or using clever rainbow traps is the best way to get the bigger bonuses.

BEE

Buzzes around in a predictable pattern, at roughly 30 degrees to the horizon, turning when it collides with any solid scenery.

TRUE IDENTITY: Puru Puru

SPIDER

Baby of the Boss. One of the more formidable enemies. Follows you by spinning webs up the screen, but only when you get above it. It also bounces left and right after you – so watch out!

TRUE IDENTITY: Banebo

HIVE

Drops down from top of the screen and releases bees. First appears on Round Two and releases two bees, and again on Round Three, releasing three bees. Take out the Hive quickly unless you want kill more enemies.

TRUE IDENTITY: Puru Puru

BABY WORM

Patrols the platforms left and right, turning when it gets to a gap – unless it's angry, in which case it drops down to the platform below and turns towards Bubby (or Bobby). Beware! The Baby Worm climbs over rainbows!

TRUE IDENTITY: ZenChan

BEETLE

Patrols platforms – until it gets angry and decides to come after you. When it's angry and you are above it, the Beetle flies in straight lines after you. Otherwise, it drops down to your level. Fortunately, it doesn't re-evaluate your position too often.

TRUE IDENTITY: Monster

CROW

Behaves similar to the Beetle, but hatches from an egg and flies after you, stopping at regular intervals to check your position.

TRUE IDENTITY: Monster

MINOSUKE

The Bag Worm. Encased in its chrysalis hanging from a thread (at which point he's safe to the touch), it blows a bubble and drops as an angry Baby Worm when you get near. The Minosuke appears only once in the entire game!

TRUE IDENTITY: ZenChan

BOSS SPIDER

The Big Mom Spider stands between you and Island Two: Combat Island. Starts asleep at the top of the screen (her eyes are closed) then as she drops down from her web her eyes begin to open and she bounces after you across the screen. Her energy is shown at the top of the screen and is drained with 10 hits.

GEMS

Drop a Rainbow on a bad guy and it leaves behind a Gem, which stays on screen for three seconds. You can capture a creature with the edge of a Rainbow and break it to get a Gem, but this is difficult and you more often than not end up breaking the Rainbow and getting a Gem.

You may have noticed that when you collect one of the seven different rainbow-coloured gems, it's displayed at the bottom of the screen. This is to let you know which colours you have acquired – the reasons why must remain a secret for the time being. Suffice it to say the Gems are quite important.

COMMON THINGS TO COLLECT

BONUS OBJECTS

There are 80 different types, ranging from the Green Pepper (worth 10 points) to the Money Bag (worth 10,000 points). Each Bonus Object collected produces the next bonus object in the sequence. But beware: this sequence wraps around after the Money Bag back to the Green Pepper. All items are collected by walking over them or hitting them with a rainbow (either the star that produces it or by simply dropping a rainbow on the object). Bubby and Bobby have 20 seconds to collect these objects before they disappear.

MAGIC STARS

Come in two forms: Yellow and Red. Both throw out death-dealing stars, the Yellow an arc of seven and the Red in a circle of 16.

RED POTS

These aren't left lying around too often, but behave exactly the same as their Special Feature counterparts.

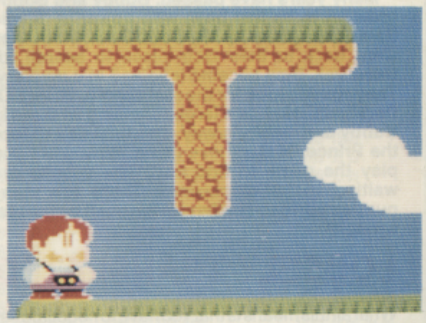
HIDDEN BONUSES

One of the best ways of boosting your score is to find and collect the Hidden Bonuses – mainly fruit, vegetables, cakes and sweets. On average around only 10 such objects can exist on screen – no more are produced unless you dispose of enemies or other Bonus Objects on screen. Bonuses Items are only found before the 'Hurry!!' message appears.

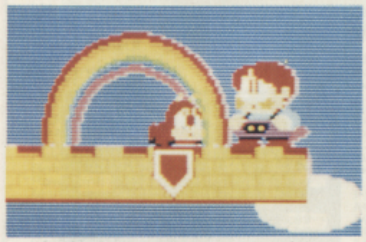
Collect any visible fruit and the like, then throw rainbows at the tops of the platforms – the magic of the rainbows causes bonus objects to appear, in the same sequence as before. And again, the sequence is reset when Bubby or Bubby dies. Note that the scores that rise when you collect the objects are in rainbow colour sequence.

Also, not all hidden objects are uncovered from the platform tops – some appear from mid-air! The Round maps provided for Insect Island show where you can expect to find any Hidden Items.

There are Special Items to collect which cause all Hidden Objects to appear in one particular form, eg: Money Bags. In fact, it's possible to make all Hidden Items become explosive Red Stars!



RAINBOWS

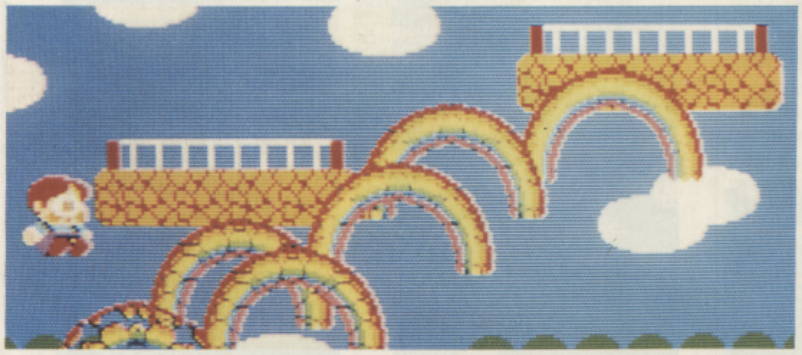


They may look daft, but the rainbows have many uses. Their main function is as a weapon to kill the bad guys. However, they can also be walked on, jumped from, used to trap creatures or items, used as protection to deflect the flying beasts or crushed to fall on enemies or objects below.

Only 12 rainbows may be on screen at one time, allowing complex traps or platform arrangements to be built. The appearance of any more causes the oldest rainbow to disappear. However, firing a band of three rainbows with two bands of three already present on screen causes the first thrown band to disappear. Otherwise, rainbows stay on screen for around 12 seconds before their magic begins to fade – they flash for a second and crumble away.

Use the star that creates the rainbow to kill a bad guy and it spins up and away in the direction it was moving. When it lands on firm ground, it leaves behind a Bonus Object, in the same sequence as before.

Bubby or Bobby can walk on or over a rainbow, or shatter it to send it crashing below. If they slide down a rainbow and step onto one on the other side, it gets broken.



Land on the edge of a rainbow and it crumbles and falls down the screen. Any rainbows directly connected the crushed rainbow fall with it, allowing you to create a string of death or an arm of immense collective power. Each rainbow crushed is worth 10 points.

However, jumping as you land on the rainbow means that it isn't crushed and your jumping height is extended enormously. Jumping off a rainbow is also worth 10 points.

Beasts and other objects can be trapped inside rainbows – but don't leave the enemies cooped up for too long or they get angry. Break the rainbow from above or below to crush its contents.

For extra height, make a rainbow stairway and jump or climb it. This way you don't need the background, which comes in very handy on later, platform-starved islands.

THE BOSS ROOMS

The fourth Round at the end of every island is a Boss Room. Killing the Bosses living in the Boss Rooms can prove daunting, so it helps to know how each one will behave relative to you. The most important technique is to lay 'traps' of rainbows – as the Boss moves into it, break the chain and any touching rainbows deplete the Boss' energy by a unit apiece. Remember: you get a couple of seconds before the Boss appears when you first enter the Boss Room.

The best way of all is to shoot and break the rainbow almost simultaneously (ie: jump into it as soon as you fire) – not only does the star hit the Boss: the broken rainbow also counts as a hit.

With the Big Mom Spider, use this time to fire off some rainbows under her. Wait until she drops and touches the rainbows before breaking them. Now walk back and forth across the bottom of the screen, shooting off rainbows at the spider as she makes contact with the floor. It's best to stay on ground level, although cocky players go straight to the top an unleash a stream of rainbows and dispose of her almost instantly.

SPECIAL FEATURES

Every third creature killed, regardless of the technique used, leaves behind a Special Feature item, which stays on screen for five seconds before disappearing. The Special Features appear in a sequence of seven, which is reset when Bubby or Bobby dies. This is the sequence in order of appearance...

TRAINING SHOES
Help Bubby and Bobby run faster.

RED POT
The Star now produces two rainbows.

YELLOW POT
Allows Bubby and Bobby to fire their rainbows faster.

RED POT
Provides a second extra rainbow. Bubby can now unleash the maximum of three rainbows in one shot. Actually, it is possible to fire a string of FOUR rainbows, but only after collecting a Special Item!

YELLOW MAGIC STAR
Behaves exactly the same as the aforementioned Yellow Star.

CRYSTAL BALL
The Boss Of Shadow's boys aren't what they seem... Collect this Crystal Ball to break the Disguise Spell. When you kill the enemies and they spin away, you can see them as they really are: Bubble Bobble baddies!

The eight Bubble Bobble baddies manifest themselves in different ways through the game, each alter ego behaving similarly to their real selves. For example: Rainbow Islanders that drop things as they move back and forth across the screen are more often than not the Invader in disguise.

INVADER
The original Taito Invader moves back and forth across the screen, dropping bombs as it goes. It doesn't appear until Combat Island.

ZENCHAN
Moves back and forth across the platforms, stopping and turning when it reaches a gap – until it gets angry. On later islands the ZenChan falls down holes, regardless its mood. It first appears as the Baby Worm.

HI DE GONSU
Behaves very much like the ZenChan, except it fires. The life expectancy of its bullets increases on later islands, ie: the bullet travels further. The Hi De Gonsu also starts to fire in your general direction, and eventually it jumps after you! It first appears on Combat Island.

BANEBO
The 'Thing On A Spring' bounces horizontally towards Bubby or Bobby, jumping after them when they get above it. Later incarnations wait until either guy gets near before they respond. The Banebo first appears as the Spider.

PURU PURU
The least dangerous of the flying enemies. It starts disguised as the Bees (and the Hive from which they are produced for that matter).

MAITTA
Behaves very much like the ZenChan and the Hi De Gonsu. At first the Maitta fires a single projectile, but on later islands it fires more often and the missiles travel further. Combat Island is where the Maitta makes its debut.

MONSTER
The other flying enemy is tricky. As it homes in on Bubby or Bobby, it stops and starts to check their position. On later islands it moves in faster but shorter bursts, and checks your position more often. The Monster starts life as the Beetle and the Crow (including the Egg from which it hatches).

DRUNK
He doesn't actually appear in these conversions. Taito's original Rainbow Islands features 10 islands in total, and the bottle-throwing Drunk is only found on the last three (which Graftgold had to leave out to due lack of disk space).

RED MAGIC STAR
Behaves exactly the same as the aforementioned Red Star.

Collect the first four Special Features and Bubby or Bobby has full power. This only involves killing 12 bad guys, so recovery following death is swift.

SPECIAL ITEMS

After the sequence of seven Special Features, the next third enemy to die produces a Special Item, which again only lasts for five seconds. There are 42 Special Items in all, each behaving in one of four ways: an immediate one-off effect, a delayed one-off effect, a temporary timed effect, or a temporary effect that lasts until the Round is over. The Special Items range from Rings, which simply award bonus points, to Magic Wands that have an amazing effect on your rainbows! The Special Items are so special that all won't be revealed in full until a later issue.

GOAL IN!

Get to the top of the first three Rounds and a Magic Chest throws out 16 Bonus Items (from a selection of 32), each worth 500 points. Collect them quick!

Crush any unused rainbows to avoid walking on them or you could find yourself in mid-air with no place to go. But be quick! Take too long and after approximately 45 seconds the 'Hurry!!' messages rolls across the screen. Eight seconds later the water rises.

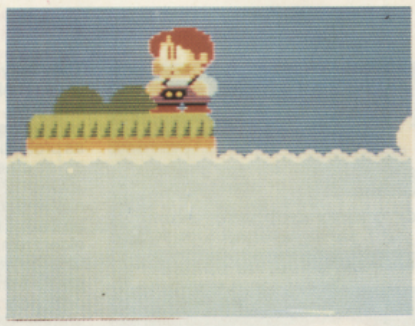
With the Boss removed from the scene, a big Magic Chest drops onto the floor and, like its smaller counterparts found at the end of other Rounds, throws out 16 Bonus Objects PLUS one big Bonus Object worth 100,000 points!

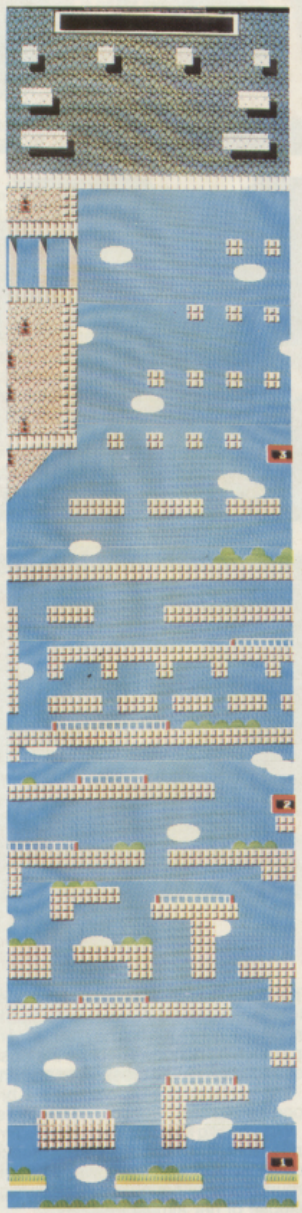
HURRY!!

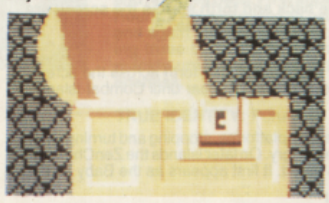
Each Round has a preset time limit before the 'Hurry!!' message scrolls across the screen. When this happens you know you only have eight seconds before the water rises – each of the Rainbow Islands is slowly sinking into the sea, you see.

On Insect Island, 'Hurry!!' appears after 55 seconds. On Round Two it's 50 seconds, while on Round Three you get 60 seconds, and on Round Four there's only 55 seconds before you are told to get a move on. Don't panic. Play it cool – even when you fall, it won't necessarily be in the water as in its early stages of flow it scrolls down with the screen slightly, giving you vital seconds to get on up.

Where you die affects the time remaining before the 'Hurry!!' message appears. You get a percentage of the overall time for that Round, depending on your Restart Position. You are given 80% of original 'Hurry!!' time when you restarts from Position One, 50% of the time from Position Two, and from Position Three only 30%.







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THE NINJA WARRIORS

(Virgin/The Sales Curve)

The Sales Curve's Dan Marchant dons pyjama bottoms and provides this beginners' guide.

TROOPS

The gun-wielding troops, like the riflemen, snipers and bazooka-carriers should be killed with shurikens as soon as they appear. Otherwise, they may get a shot or two off before they expire, in which case duck or jump to avoid their shots.

KNIFERS

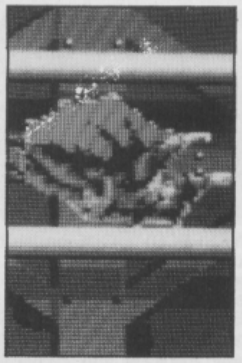
Don't waste your shurikens – wait for them to get close and then slash them.

THE COMMANDER

Easily recognisable thanks to his fetching beret and a patch over one eye. DON'T kill him straight away – wait for him to use his walkie-talkie to summon more troops, ripe for the killing.

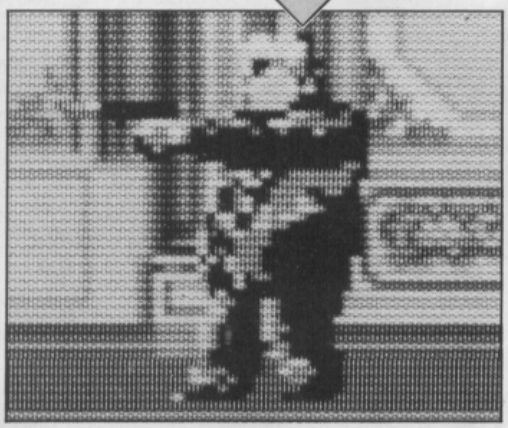
IRON ARM

The meanest dude of the lot, swinging his deadly ball and chain should you dare to get too near. There are two ways to dispose of him... Firstly, defend with your knives as you walk towards him, then duck under the ball and chain as soon as he attacks, and throw a shuriken at his legs. Move back quickly and repeat. Alternatively, somersault towards him, and land directly in front of him, toe to toe. Crouch down as soon as you land and slash as fast as you can. Each time you slash, Iron Arm is stunned and unable to defend. Keep slashing to finish him off, but you must slash QUICKLY!



FLYING SQUIRRELS

Appear if you somersault too often. Turn to face them and quickly throw a shuriken as they swoop to cause them to crash into the ground.



BANGLER

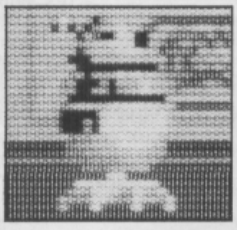
Awaits on the final screen. He sends out the troops against you first, then tries to shoot you before finally getting trapped against a wall. He begs you not to kill him but pay no attention – get in close and slit his throat from ear to ear!

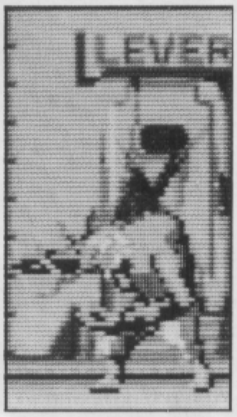
SHADOWMAN

Dressed in dark blue, he first appears on Level Three. Despite the fact that he teleports, he's actually the easiest to kill because he moves so slowly. Crouch down facing him and throw a shuriken at his legs. When it hits he teleports behind you. Turn to face him, but wait until he has materialised properly before throwing your next shuriken.

THE BSVO DROID

Appears in the first three rooms of the final level, accompanied by Ground Spider, Swordlady and the Shadowman. Despite his size he's lethal and must be taken out ASAP. Somersault behind him to avoid his laser, then get close in behind him. Crouch down and slash him repeatedly until he explodes.



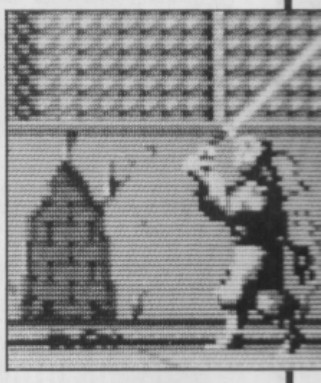


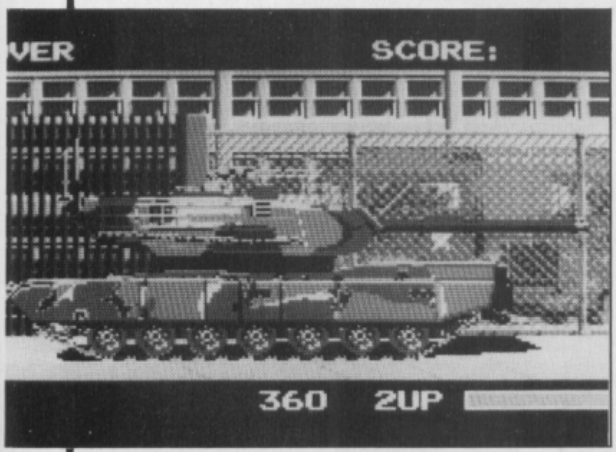
THE GROUND SPIDER

Walk away from him and he follows and jumps over you. Slash him in the back as he lands, then turn, walk away and repeat.

SWORDLADY

The blue-clad bitch awaits at the end of Level One. Crouch down, get in close and throw a shuriken at her legs. This causes here to leap over her head. Quickly turn and throw a shuriken before she lands – it should be just in time to hit her. Provided you hit her, she leaps back over you and you can repeat the process.



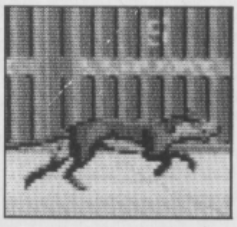


THE TANK

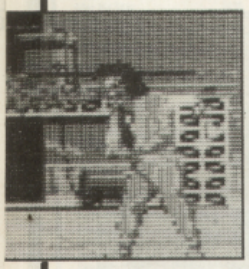
The metallic muther attacks twice on Level Two and twice again on Level Four. The screen stops scrolling when a Tank appears, so you can't just walk on by. As soon as the it appears, the Tank lets rip with a volley of machine gun fire. Somersault forward to avoid this. Stand against the front of the Tank, defending against the hail of bullets, then somersault onto it and slash the Gunner before he disappears inside the hatch. Jump off the Tank and wait for the Gunner to reappear and start again.

RABID ALSATIONS

Triggered when you block too often. When one appears, either somersault over it or slash it when it gets close.



TIPS



DEATH BREATH

Only appears on the second level and attempts to scorch you with his fiery breath. Get in close to him and wait for him to start breathing fire, then somersault over him, turn and slash him in the back. The more cowardly player may wish to keep a distance and pick him off with shurikens, but these are best saved for later.

ATARI ST

Hold down the ALTERNATE key and type in one of the following cheats...

CASABLANCA
A black and white screen display.

GENESIS OF THE DALEKS
Puts the screen into photo-negative mode. Black is white, white is black and so on.

THE TERMINATOR
Does the same as the Amiga equivalent – Ninja parts explode when you die.

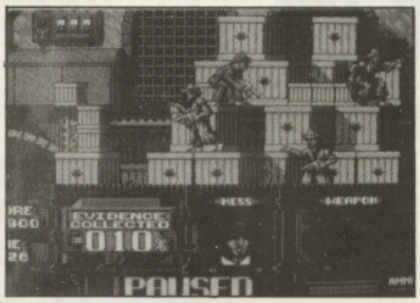
SKIPPY
Makes the enemies bounce.

A SMALLSTEP FOR A MAN
NB! There's no space between SMALL and STEP. Moon gravity mode.

EAT TO THE BEAT
Pressing 'Q' during play toggles slow motion on and off.

THE UNTOUCHABLES

(Ocean)



When the Amiga version title screen appears while loading, type in SOUTHAMPTON GAZETTE – the screen flashes to indicate the cheat mode is active. You can now hit F10 to skip levels.

The ST version's cheat is a little more tricky to implement. On the first level, hit F10 to pause the game and type in BRIDGE ROLLS (including space) to skip to Level Two. On the second level, pause again and type MAC N ALLEY (again including the spaces) to skip you to Level Three.

THE NINJA CHEATERS

AMIGA

Press the CAPS LOCK and type in one of the following cheat codes (shown in block capitals). Don't forget to include the spaces! Press CAPS LOCK again to turn it off and activate the cheat.

THE TERMINATOR
Causes the Ninja's body parts to explode when either player dies.

MONTY PYTHON
The enemies come on facing backwards.

SKIPPY
Causes the enemies to bounce around the screen.

A SMALL STEP FOR A MAN
Initiates moon gravity. Anything that jumps leaps right off the top of the screen.

STEVE AUSTIN
Begin play and press 'S' toggles slow motion mode.

But if it's real cheating you want, try these two Amiga gems...

MAY THE FORCE BE WITH YOU
Awards infinite stamina.

CHEDDAS
Awards infinite credits.

WARP FACTOR ONE, MR SULU
Level skip. Press keys 1 to 6 to go to the relevant level.

OPERATION THUNDERBOLT

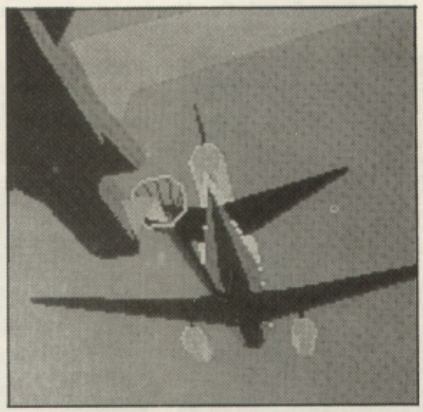
(Ocean)

So typing SPECCY MODE on the high score table to bring on twice the number of enemies wasn't enough for you, eh? Well try these two choice cheats. Enter your name on the high score table as EDOM TAEHC (CHEAT MODE backwards) to be awarded infinite lives. This is NOT to be confused with infinite energy – you can still be killed. It just means you can start again on that level as often as you like.

If you want something a little more extravagant, enter your name as WIGAN NINJA. Now you have infinite lives once more with the added bonus of being able to hit F7 to skip levels!

FIGHTER BOMBER

(Activision)

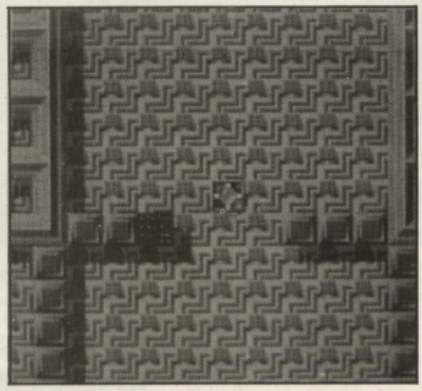


On the ST or Amiga pilot selection screen, enter your pilot's name as BUCKAROO. The message at the bottom of the screen acknowledges that the cheat mode has been activated. You can now choose any mission you like, without having to complete the previous ones, and as an added boon your plane now comes complete with a couple of useful extras. For a start you can fly on the ground (try it and se!), and you can also hit D any time during flight to be taken straight to your next target.

The PC cheat mode is a little less extravagant. Type SO WHAT IF I DO? on the pilot screen (which refers back to Vektor Grafix's conversion of Star Wars on the PC, where you are asked DO YOU WANT TO MAKE SOMETHING OF IT?). This allows you to zoom around the map at supersonic speed using the Z key.

TITAN

(Titus)



◄ Eight handy codes to jump you through sets of ten levels at a time...

10 H67JR1
20 1R7DCG
30 BG6W61
40 294JBH
50 D80N6D
60 9LQHVU

GRAVITY

Available soon on ST and Amiga

Screenshots from ST version

In 2320, interstellar travel has become as commonplace as Intercity, and man's mission to colonise the universe is well underway.

But then the Outies appeared. No-one knew where they came from, but it was obvious what they were after . . . energy — and they'd stop at nothing to get it. They favour charged Black Holes. And they just turned your latest colony into one. But this galaxy's not big enough for the both of you.

Consult your 3D HoloTank (TM) before entering the scrolling isometric view of Einstein-Minkowski Four Space.

EXPLORE. TERRAFORM. COLONISE. ERRADICATE. CONSTRUCT. BUT ABOVE ALL: SURVIVE!

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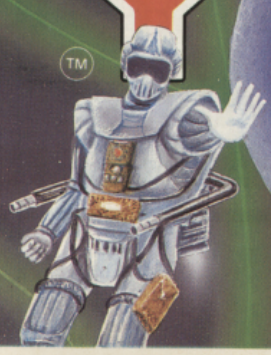

Gravity designed and programmed by Ross Goodley. Visuals by Pete Lyon.

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REVIEW

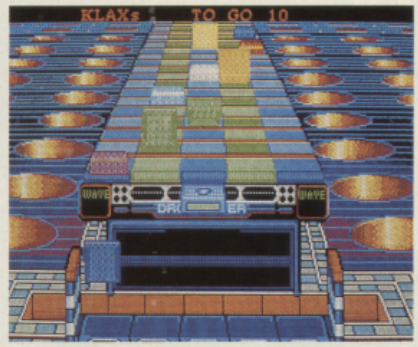
Klax

Brian Nesbitt spends a night on the tiles with Domark's conversions of the block–busting Atari arcade game.

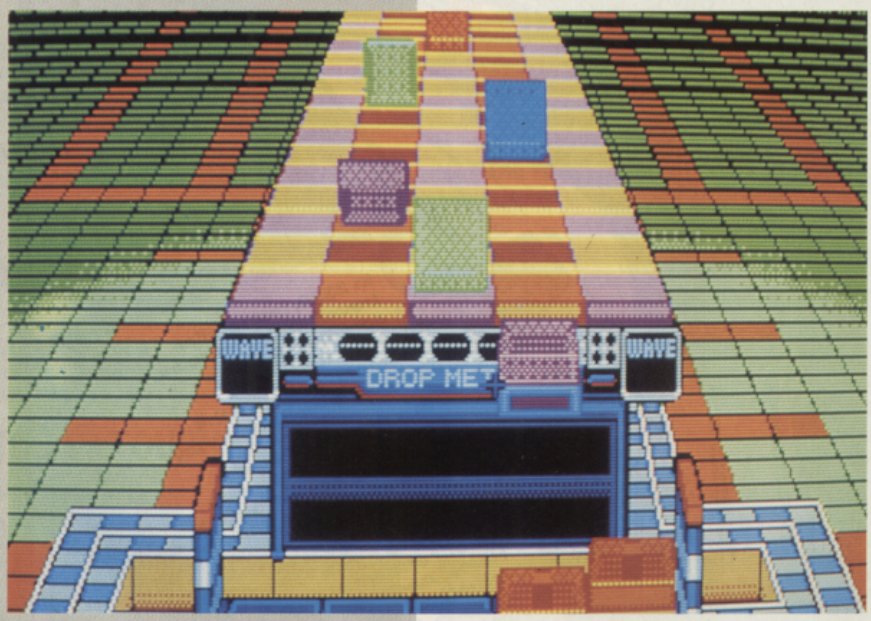
While games like Noughts & Crosses and Connect 4 may have been great fun way back when you wore short trousers, it's a good bet that these days you yearn for more sophisticated fun. Or do you? **Klax** combines those two fondest childhood memories with the Soviet classic **Tetris** and has a few original elements of its own. The result is a very different but very tasty cocktail.

The idea of catching coloured tiles as they roll towards you and stacking them up to create lines of corresponding colours may not sound totally absorbing. But then theory has never been quite as much fun as practice (and you need plenty of it!).

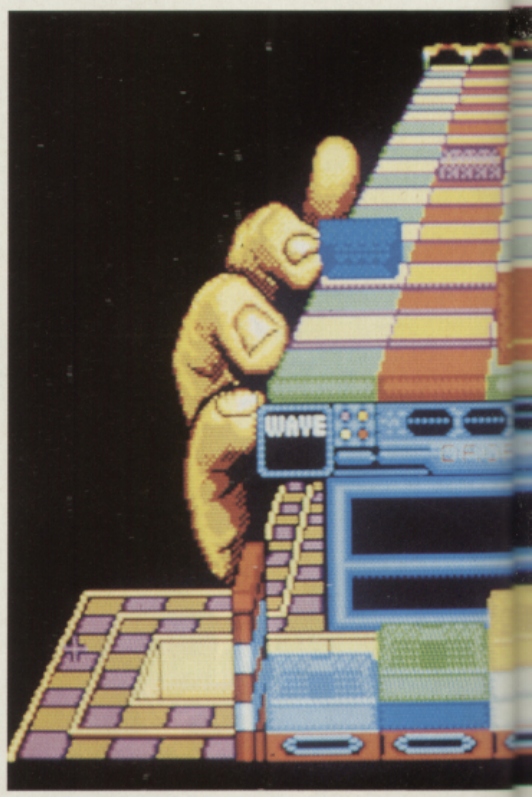
The tiles tumble down the table in any of the five lanes. It doesn't really matter which lane though, as a tile doesn't have to be dropped where it was caught. Problems arise when the going gets faster and it becomes a mad rush between lanes to catch tiles before they fall off the end of the table into the abyss. Still, if it all proves a little too much you can always 'throw' tiles back up the table to buy a bit of breathing space.



Klax tiles come in eight colours – Red, Blue, Yellow, Green, Cyan, Purple, Orange and White. There's also a flashing Wild Card tile which is effectively all eight colours at once – a bit like a Joker really. This tile comes in handy for creating multiple Klaxes, as you can drop one in the intersection of two sets of tiles waiting to be Klaxed.



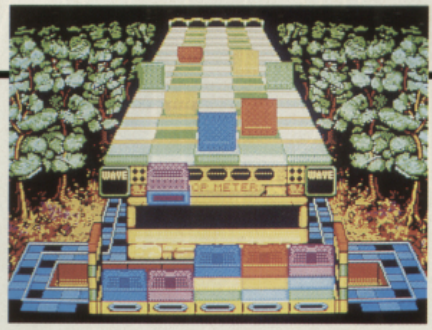
A basic Klax comprises three tiles, but advanced players will want to go for something more elaborate. With clever stacking of tiles, it's possible to create Klaxes four or even five tiles in size! As well as the obvious boon of getting rid of more tiles, this tactic is well worth employing, as hefty bonuses are awarded for elaborate play. A 'four' Klax counts as two normal Klaxes, while a 'five' Klax counts as three! The ultimate move has to be the Big X (where nine tiles make a cross formation across all five bins). This racks up the bonus points, and on certain levels earns a Secret Warp!



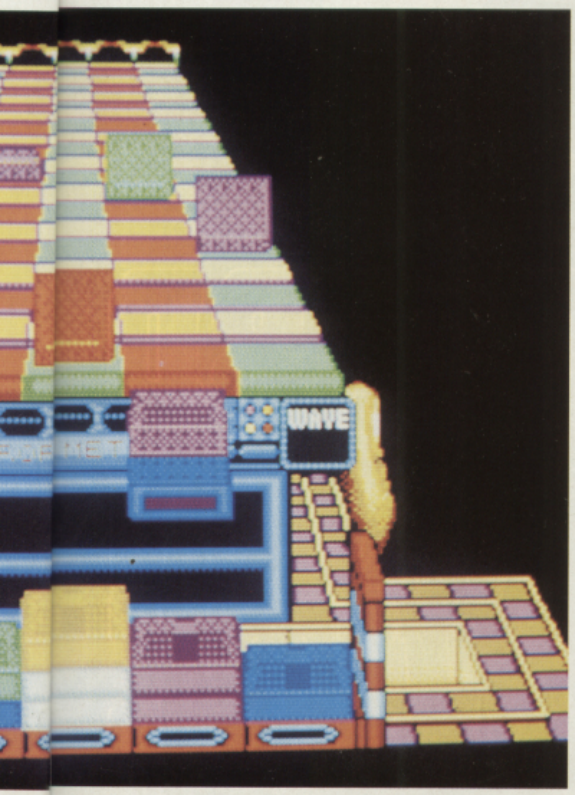
At the start of the game, and then after every 12 levels, a Warp Screen appears. Here you have three options – carry on as normal, warp forward five levels, or warp forward 10 levels. The Warp Screens also feature a few handy playing tips, which are essential for the beginner.

A second player can join the fun at any time. Two tables are shunted together, and each plays independently of the other – so there's no competition between the players. This feature was originally devised for the arcade version so that the machine could take twice as much cash as normal. Here though, it comes in handy so you don't have to fight with your brother over who plays first.

REVIEW

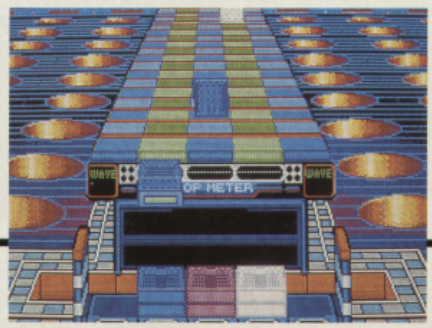


Tiles that roll off the table fall into the Abyss below, and a bloodcurdling scream is heard. Depending on the level in play, you are allowed three, four or five 'drops' before the game ends. Fortunately the paddle holds up to five tiles at a time in a stack, with the last tile to be caught (the one on top of the stack) being the next to be dropped.



A Klax is created by making a vertical, horizontal, or diagonal line of three tiles of the same colour. When this happens, they flash and disappear, with any tiles that were above them dropping down accordingly – there are never any gaps in stacks of tiles.

Tiles are piled and Klaxes made in the five bins at the 'front' of the screen. Each bin holds five tiles – after this, the bin 'locks out', and no more tiles can be dropped into it. To get out of this dilemma, create a horizontal Klax where one of the tiles is in the full bin. Simple really.



Progressing through the levels brings new, more surreal backdrops into play. Apart from the two wallpaper-style screens, there's a forest, a space rocket, and even a large hand which holds the table in mid-air!

The gameplay in Klax isn't just one long line-making escapade. It's split into 99 levels, and in each one you are set an objective, which must be achieved to progress to the next level. At first you can simply create a few Klaxes of any type, but on later levels you are set more specific tasks, like making 10 diagonal Klaxes, surviving an onslaught of 40 tiles, getting 10,000 points, and so on. And of course, as you progress through the levels, the tiles come faster and in greater numbers.

A Ignorance is bliss. And few concepts come any purer and more entertaining than Klax. It's the first variation on the Tetris theme to give it a run for its money. Strategy is more apparent than in Tetris, with the potential to create multiple and 'big' Klaxes, and the enjoyment is further enhanced thanks to the tasks to complete. Sure, this conversion isn't quite as aesthetically polished as the original. The important thing is that none of the all-important coin-guzzling gameplay has been lost during the process of translation. It's en-tile-y brilliant!

PRICE	£19.99
RELEASED	Early April
GRAPHICS	84%
SOUND	80%
PLAYABILITY	95%
VALUELD	92%
OVERALL	**93%**

ST Apart from the aforementioned graphic imperfections, there's little to differentiate this baby and its arcade parent – especially with an astounding array of sound effects sampled directly from the 'real thing'. Get ready to Klax at the beginning of April – but make sure you have 19.99 in your pocket.

PC The asking price is 24.99 – and for that you get CGA, EGA, VGA, Hercules and Tandy support, but unfortunately no sound card benefits. This conversion is as close to the coin-op as the ST and Amiga versions, and should be in the shops by early April.

THERE'S NOWHERE TO HIDE FROM

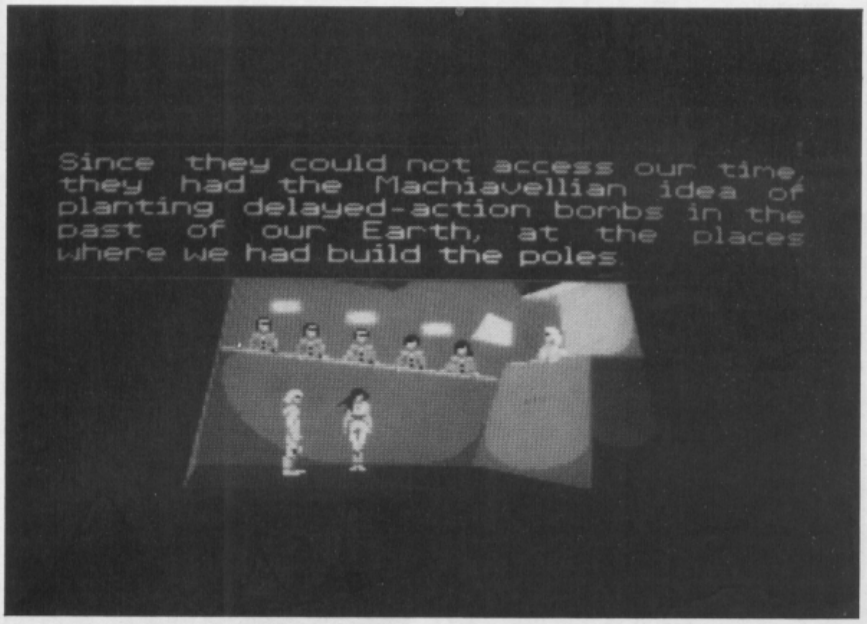
HIS CALLING CARD IS YOUR INVITATION TO DANCE WITH DANGER!

ocean

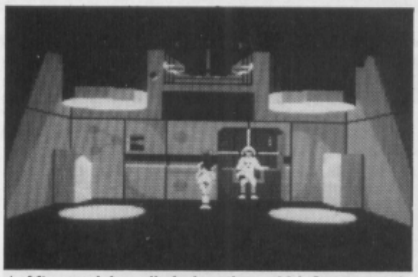
TIPS

FUTURE WARS
(Palace/Delphine)

Struggling timelords need struggle no longer. For here is your saviour: Paul Presley takes you through the final stages of this epic adventure.

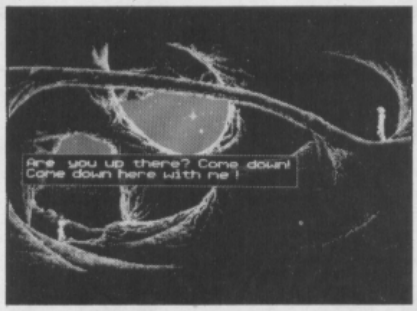


▲ You are then escorted back to the council, where the president treats you to a long speech, explaining the story behind the whole adventure – who the Crughons are, what their plan for domination is, and how they intend to go about it. Listen carefully, as this information comes in handy later on. Now let's get back to your mission...

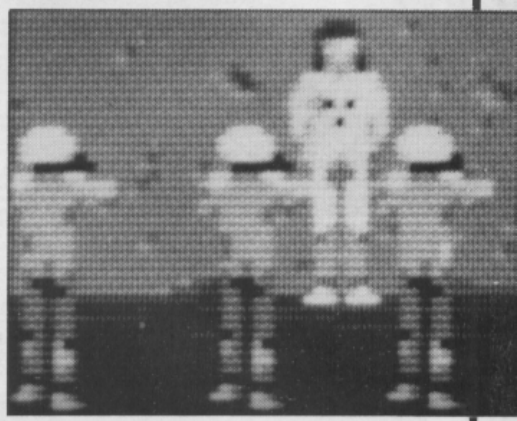


▲ After a quick spell of education – 44th Century style – you and Lo'Ann prepare for the final part of your mission... 65 million years into the past! With a flash of light, you depart.

▼ And before you know it the scenery has changed drastically. Make your way down the rock face to Lo'Ann – she gives you a compressed air gun. Follow her off the screen to the left.

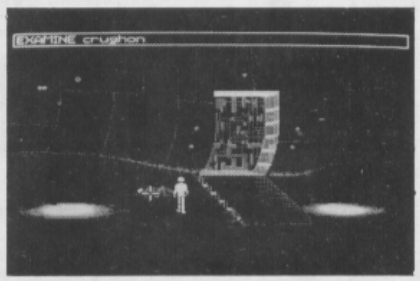


▼ Uh-oh. Crughons. Lots of 'em. You catch them in the act of laying the final time bomb – but what can you do? Blow them away! Unfortunately, the Crughons are quick to spot you, and promptly exercise their itching trigger fingers. This arcade section isn't that tough – simply use your crosshair to erradicate the alien scum, giving priority to the ones marked DANGER. Leave them too long and you get shot dead. Take out the lead Crughon on the floating platform and then mop up the rest. But just when you thought you'd got them all...



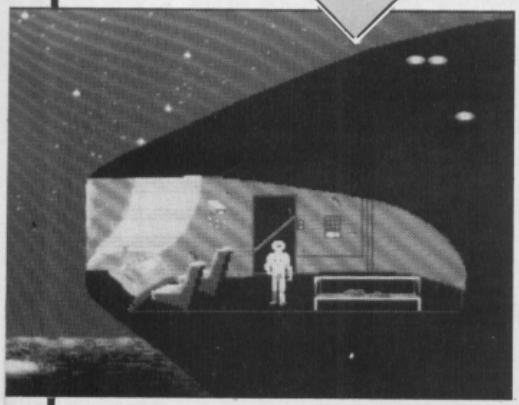
▲ At the end of last month's thrilling instalment we left you here, wrongly accused of being a Crughon spy and up against a military firing squad! But just when you think it's all over, Lo'Ann bursts in and calls everything to a halt. She proves your innocence and you go free – but that's not all...

▲ Hola! Lo'Ann gets shot! Having dispatched the beast, EXAMINE Lo'Ann – the first time you find nothing, but EXAMINE her again and you get a valuable Invisibility pill. EXAMINE her a third time to get a Pendant which you should then USE on Lo'Ann to revive her. She's then beamed back to the 44th Century, leaving you to go on ahead alone. Walk over to the far right of the screen and down towards the Crughon space freighter.



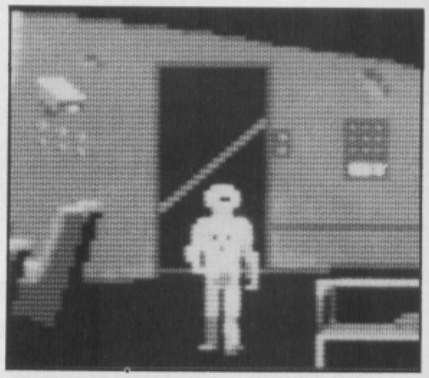
▲ Get up close to the Crughon you just wasted and EXAMINE him to get your hands on a handy magnetic card. Walk up the gangplank and enter the ship.

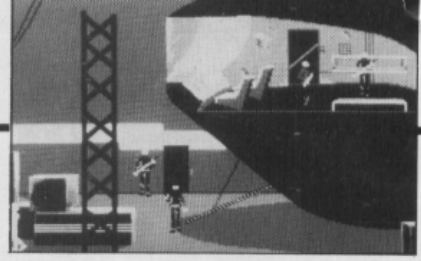
TIPS



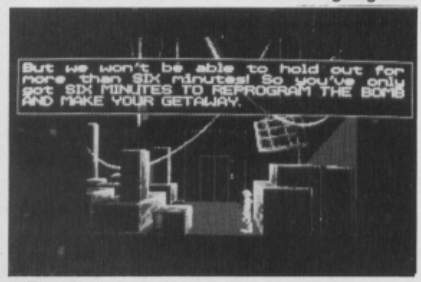
▲ OPERATE the case, get up and stand directly to the left of the exit door. When the Crughons open the door, USE the Invisibility Pill. Wait for the Crughons to enter the cockpit and then leave. Make your way down to the bottom of the gangplank, and get down to the bottom of the screen – QUICKLY, as the effects of the pill are short-lived. And make sure you don't bump into any Crughons as this also reveals your presence. At the bottom, wait to become visible again and OPERATE the large box on the left to open it. Now enter it.

▼ Inside the cockpit, the first thing you should do is USE the magnetic card with the card reader in the wall to your right. Then go over to the glass case at the front and OPERATE the case (you need to point to the black base section, not the glass cover) to open it. TAKE the garment from the case, then go over to the video camera in the far corner and USE the garment on it. Now go and lie down on the slab where the garment was and OPERATE the case again to lower it (it's actually a hypersleep unit) and activate the ship.





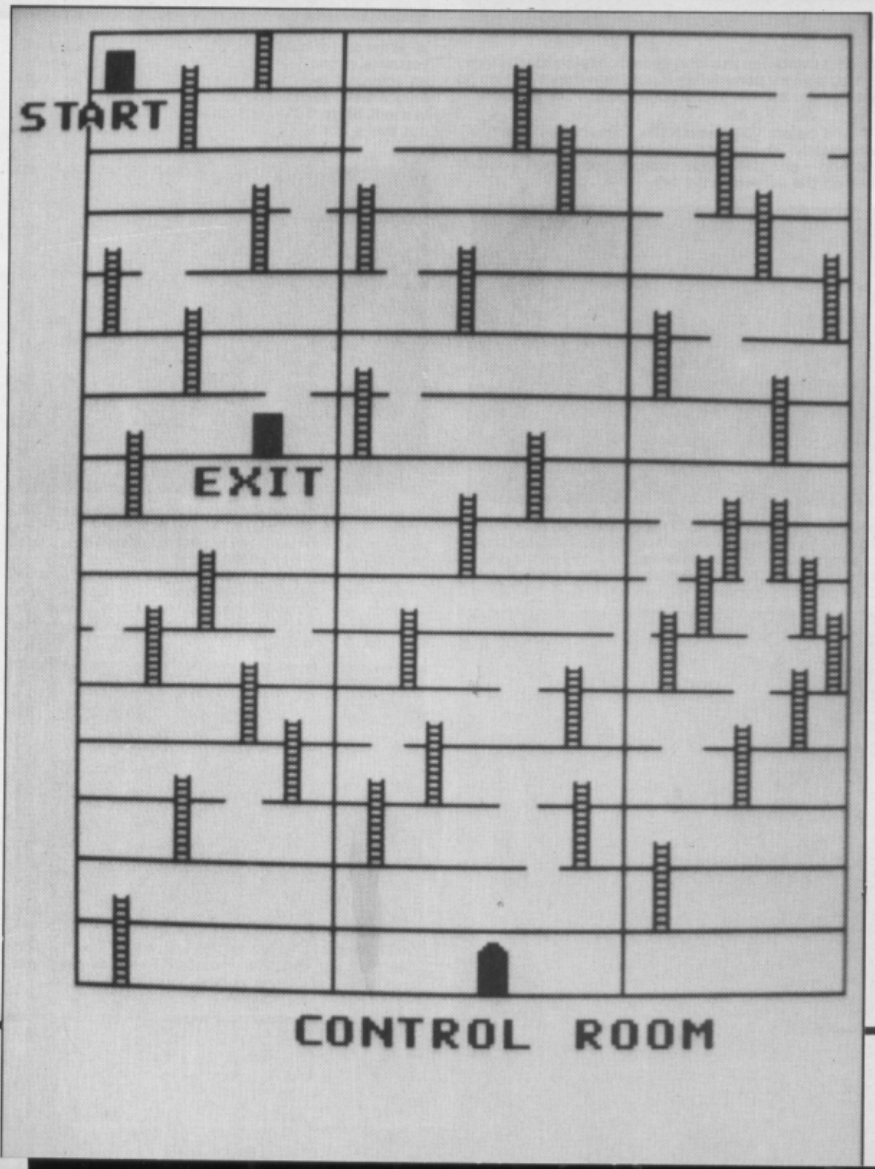
▲ With the magnetic card flying the ship on Autopilot, you are locked on course to the Crughon's floating headquarters in space. After docking with the massive space station, the Crughons come out to meet you. The ship's returned prematurely, and the video camera's view has been obscured, so it's no wonder the alien fiends are curious as to what's going on...



▲ There's another set sequence to watch inside here, and once it's over, you should leave via the door at the far end. Now you find yourself in a levels 'n' ladders maze – follow the first line on the map to get to the control room.

▲ Inside the control room, go over to the small monitor on the left-hand side of the screen and USE the magnetic card on the console. Another set sequence follows – watch this before leaving the room. Now make your way back through the maze, following the second line on the map.

▼ Congratulations and celebrations! You have completed the game – sit back and watch the show...



NEXT MONTH!

- Have A Ball With E.MOTION!
- All The Fax On KLAX!
- Crack Down On CRACK DOWN!

PS

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REVIEW

Ski Or Die

If you can't stand the heat – get out of the cold. Gary Whitta has a (snow) ball with Electronic Arts.

The cold weather has taken its toll on the annual **Skate Or Die** tournament – not even the champion Lester can skateboard with three inches on snow on the streets. For this reason the games have been ever-so-slightly altered this year. You're not skating for survival any more.

Now you're skiing for survival.

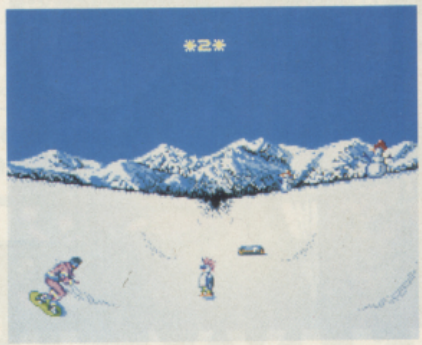
Five suitably wintry events await you and the rest of the contestants, and once again its the man Lester that everyone's out to beat – so much so that the champ is playing a less active role this time, preferring to stand on the sidelines as a judge for some events. But don't think the snow's going to soften your fall – it's a frozen hell out there...

Once again it's the infamous Rodney who owns the local equipment shop and has organised the whole tournament. He's also Lester's dad, but as an ex-pro, Rodney wouldn't dare show any bias. Our Rodders has put on a fair bit of weight since we last saw him – "Hey! The altitude increased my appetite!" he says. Wide waist aside, Rodney offers a host of services – you can browse around his shop, sign in for the competition and view the high-scores before choosing to practice or compete.

The most diverse of all the events is the Snowball Blast. From your fortress of ice in the centre of a snow-covered field, it's your job to defend yourself from an onslaught of snowball-lobbing kids. With just a couple of hundred snowballs (aimed using a crosshair) to start off with, its vital that you place your shots carefully. To make your job harder, the kids Commando-roll their way through the snow to avoid your shots! As you get pelted with snow, you slowly become a human snowman – fortunately by knocking out bonus objects its possible to top up your snowball supply, recoup lost energy (which is shown as you shoveling snow off yourself) and even power-up to rapid-fire snowballs!

REVIEW

Otherwise known as Hot Dogging, the Acro Aerials is the shortest event of all, but by no means the easiest. After ski-jumping high into the air via a steep ramp, the idea is to perform as many fancy manoeuvres as possible while airborne before landing safely on the other side. The panel of five judges (including Lester) awards marks for height and performing the most elaborate moves.



The Snowboard Halfpipe is a little similar to Bobsledding, but a whole lot more dangerous. A Snowboard is basically a skateboard with the wheels replaced by a waxed surface, allowing it to slide along snow at high speed – it's a cross between skateboarding and surfing. There are no turns in the trench-like course, just plenty of logs, bumps and chainsaw bunnies (!) to negotiate. Points are scored by boarding up to the side of the trench and performing skateboard-style tricks like handstands and aerials. Lester looks on from above, passing less-than-constructive criticism (like "Go work the lifts").

Strap on your speed skis for the Downhill Blitz, a race against the clock on a treacherous mountain slope. Speed is the key as you navigate the perilously-narrow tracks between fir trees and rocks. But for a decent score it's necessary to pull some acrobatic manoeuvres along the way. But then, when you end up facing a gaping ravine you haven't got much choice...

Bearing a striking resemblance to Atari's Toobin, the Innertube Thrash is a two-player race (with Lester your opponent in a one-player game). Sat in an inflatable rubber ring, the objective is simply to slide down an icy track. Useful and not-so-useful objects litter the course, just itching to be collected, but at the end of the day you simply speed down the screen and avoid puncturing your ring.

PC

What's most immediately noticeable about Ski Or Die **is the similarity in style to its urban predecessor. All the old characteristics are here – neat graphics, tight playability, and hot rockin' sound, which is the most impressive aspect. With the PC's internal squeaker you can expect the usual 'mouse trapped inside the computer' stuff. But with a Roland sound board attached you get some of the funkiest rock music yet heard on the MS-DOS machines. Rob Hubbard's saxophone and electric guitar combo is a sight for sore ears! Like its predecessor, Ski Or Die is a well-balanced mixed bag. There's plenty of variety here, more so than in Skate Or Die, thanks to the more diverse pursuits such as the Snowball Blast and Acro Aerials. On the minus side, not all the events are as strong as in Skate (the Innertube Thrash in particular borders on tedious). Also, there are only five events in total, which is likely to detract from the lasting appeal – otherwise, Ski Or Die would have been a (snow) blinder. As it stands, it's an entertaining bundle of fun. Now how about Surf Or Die?**

PRICE	£24.99
RELEASED	Out Now
GRAPHICS	82%
SOUND	90%
PLAYABILITY	83%
VALUE	80%

OVERALL 80%

A

No specific details at present. And let's face it, Skate Or Die isn't even out yet! According to EA, we can expect to see something 'later in the year' – but that's yer lot for now.

ST

It's the same old story – nothing planned until after the summer. We probably won't see anything until the real snow starts to fall...

KID GLOVES

Somewhere deep in the heart of the Amazonian jungle there beats a drum. Softly at first and then louder, the insistent beating awakens our hero, Kid, from a deep sleep. Last thing he can remember he was pulling on an old pair of boxing gloves he'd found in his uncle's study... now, here he is, surrounded by trees and shrieking parrots. There's something weird going on round here.

Confused and uncertain, Kid's troubles are just beginning - he's yet to visit strange scenes in the Ice Age, the pyramids of Egypt, the psychedelic West Coast of the 60's and more - but he's still wearing the gloves and with your help he may yet find his way back home !

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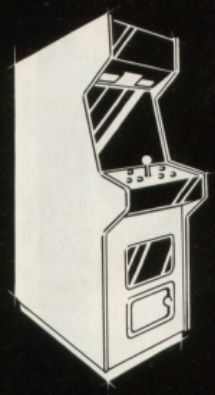

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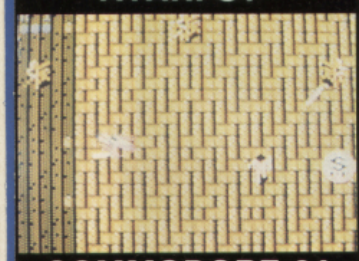

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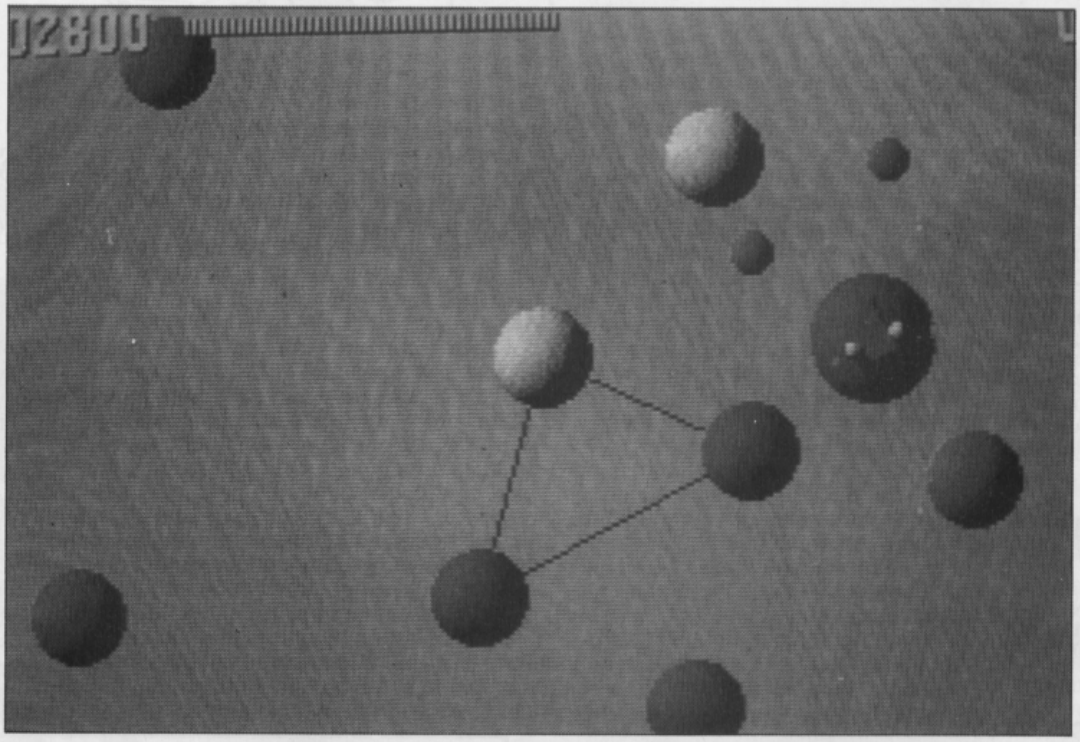

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So it's not your run-of-the-mill prize. But what the heck. What's wrong with doing something different for a change, eh? And anyway, it ties in with **E.Motion** rather nicely, thank you. As you may remember from the rave review in the last issue, molecules are the order of the day in the atomic world of E.Motion. You have to persuade them to collide before they vibrate too much and explode.

And as fate would have it, the theory behind a microwave oven is nearasdammit the same. The microwaves cause the molecules in the food to vibrate real fast and subsequently produce heat. Minutes later you have a complete 10-course meal for all the family and friends. Yum. Mind you, that doesn't give you much time to vibrate your own molecules in E.Motion... Such is the way of things.

So, now you can see the link: vibrating molecules. All you have to do to stand a chance of winning this surprisingly useful and well-pucker prize is to answer the three questions below, stick the coupon on the back of a postcard or sealed envelope and send it to MICROWAVE MADNESS, The One, Priory Court, 30-32 Farringdon Lane, LONDON EC1R 3AU – to arrive before the 28th April, 1990. Don't forget to give your name and address – oh, and state your format: ST, Amiga or PC. The first completely correct entry out of the bag after the closing date wins the microwave and a copy of E.Motion. The next 10 drawn each win the sender a copy of E.Motion.

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A The Russians
B San Andreas
C Brian Nesbitt

2) Which famous group sang Emotion?
A The Bay City Rollers
B The Bee Gees
C The Osmonds

3) Which one of the following materials should you never ever under no conditions whatsoever put in the microwave?
A Wood
B Metal
C Plastic

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I OWN (TICK ONE)

ST ☐
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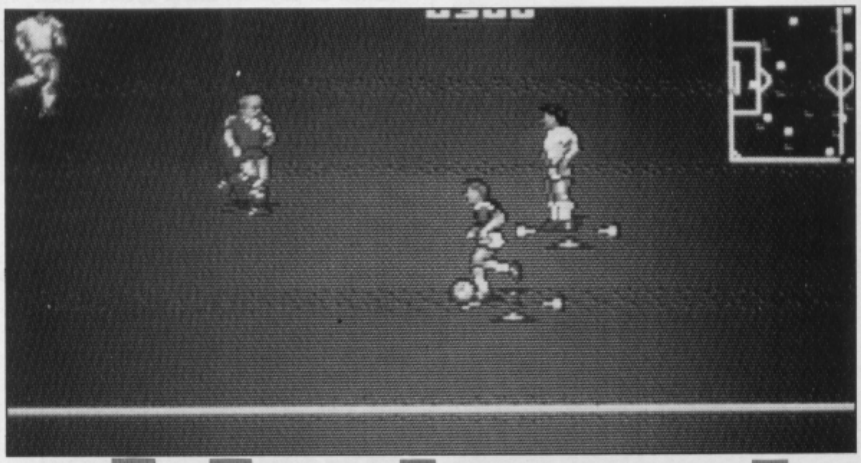
Manchester United

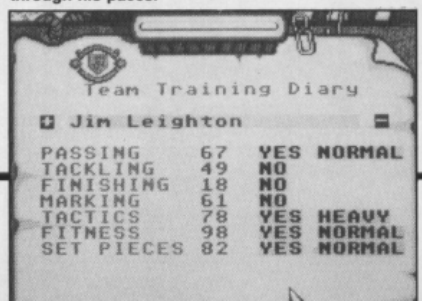


From the warmth of his sheepskin coat, Gary Whitta takes the helm of 'the greatest team in the world' in Krisalis' first sports simulation. And he's managing very nicely, thank you.

Away the reds! With Manchester United currently languishing in the bottom half of the First Division (there's even a slight chance of relegation), you might think that the boys in red and white's only hope would be the fact that their performance in the FA Cup has so far been very respectable. Fortunately Alex Ferguson does have one slight glimmer of hope in the form of Krisalis' officially-licensed team tie-in. Could this game be the trump card to inspire the Red Devils to battle back to where they belong and restore their former glory? Well, probably not. But at the every least you get to have a laugh in Fergie's shoes and attempt to take United to the top.

The season starts here. Manchester United's management section is totally icon-controlled, and this main screen displays all the available options. View and shuffle your squad, check players injured or under suspension, devise a training programme, view the league table and your fixtures, buy and sell players, and of course play matches.

Training is vital if your players are to perform to the best of their ability. From here you tell players to concentrate their training on specific areas (preferably their weakest). Out of the all the training areas, a player can only train on four at a time – so choose carefully. If a player needs an extra boost, switch his training mode to 'heavy' and really put him through his paces.

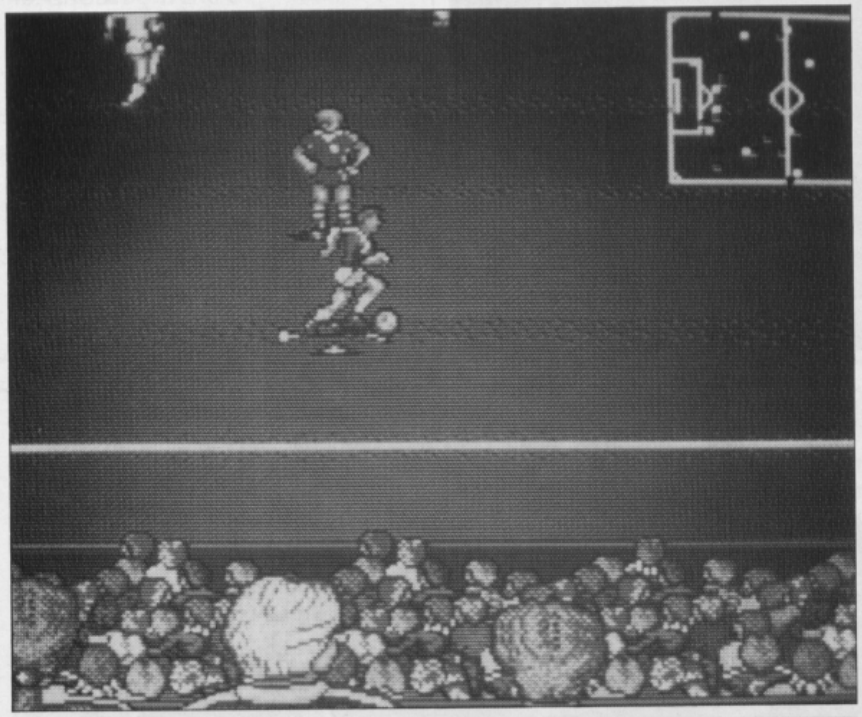


Buying and selling players isn't as simple as you might think. For a start you can't just sell a player immediately – there might not be anyone who wants to buy him. The best you can do is put a player on the transfer list, and wait for bids to come in before taking the best offer. Buying new players for your squad is trickier – you can either put in bids for players on the transfer list or go scouting, and offer teams cash for players that aren't up for sale. The choice of players is wider here, but since the teams are reluctant to let them go, you may have put in a bid a bit over the odds to persuade them.

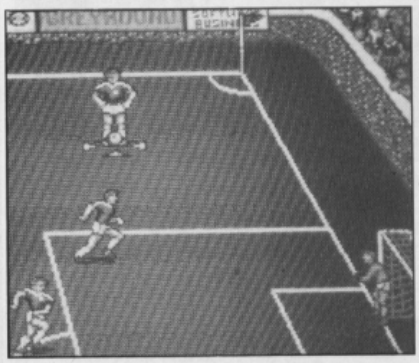
REVIEW

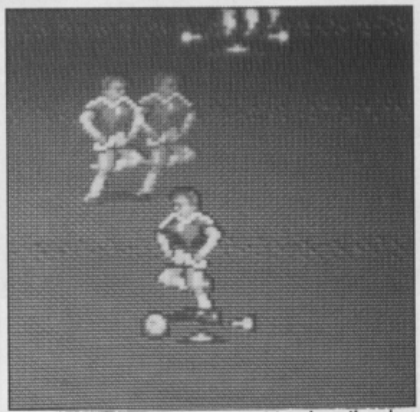
Tackling normally results in successfully acquiring the ball. Unfortunately, a player who is tackled constantly could well be injured and put out of action for a few weeks. Justice normally prevails however, and the man in black isn't afraid to suspend offending players.

A regular progress report comes in the form of The Daily Sport. There's no bias here. Perform well and you get plenty of praise – but screw up and... well, the paper isn't afraid to tell its readers what it thinks of you.



Now get onto the field to play your next game, be it League, or Littlewoods or FA Cup. The arcade action is simple enough – you always control the player nearest the ball over the eight-way scrolling pitch. It's full 11-a-side stuff, with only the 'keeper staying under computer control (except during penalties).





It's not just the league you want to win – there's a Littlewoods and FA Cup out there to be taken, too. When either tournament starts, two old timers from the football league make the draw for eacn round.

AMIGA

Football fans after more than just a spot of on-field action have at last got something to shout about, what with the release of Anco's Player Manager (see Review on page 53) and of course Krisalis' Manchester United. Having to make comparisons between the two is on the surface unavoidable (unless you are a die-hard Red Devil). However, what we have here are two different approaches to the same theme. Player Manager is more of a technician's dream, with its seemingly never-ending stream of facts and figures to manipulate. Manchester United on the other hand, is less of a player's nightmare, providing an easier entry-point to team management – but that's not to say it lacks depth. There's a wealth of strategy and realism to ensure an engrossing time is had by all. Manchester United's most impressive result though, is its presentation. There's no need to wade through reams of statistics or player lists – manipulating your team, selling players and making changes, however complex, are all carried out with the greatest of ease. But it's only when you get out on the pitch that you see how shrewd your managerial decisions have been – and even on the turf, there's plenty of room for tactical play and one-man wonder performances. It's all great fun – especially with two players, as a mate can take control of the opposing side at any time. Krisalis has done Fergie proud. Let's hope it's enough to keep United in the first division!

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RELEASED	Out Now
GRAPHICS	82%
SOUND	80%
PLAYABILITY	89%
VALUE	83%
OVERALL	**87%**

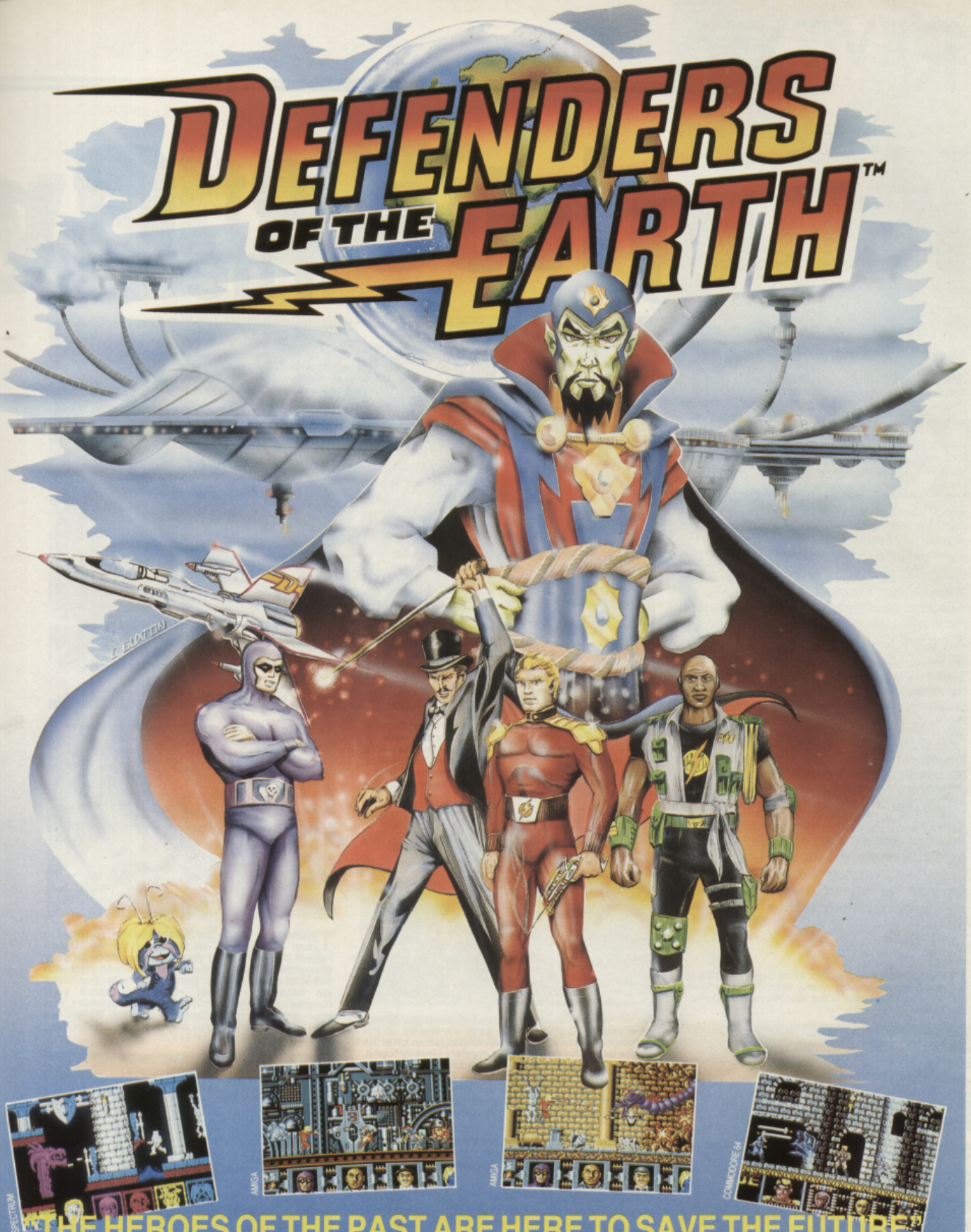
ST

The asking price is £19.99 and it's in the shops now. Playability-wise it's business as usual. However, as Teque's Dean Lester explains, the poor old Atari can't really keep up with all this new-fangled hardware scrolling, and so the arcade section isn't quite so technically accomplished – but arguably more realistic as a result! It runs slightly faster, but the pitch isn't quite so nice to look at and there's no crowd... Ho ho.

PC

An April release date has been set, and there's to be both CGA and EGA compatibility – but unfortunately no sound board support, so it's Blip City in that department. The asking price is £24.95.

DEFENDERS OF THE EARTH™



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ENIGMA VARIATIONS

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Knights Of The Cr

SSI's latest isn't just a strategy game – it's a way of life. Kati Hamza lives it to the full.

Knights Of The Crystallion is a simulation. Not of flight or a submarine or a tank, but a full-scale cultural simulator complete with its own internal socio-economic and mystical laws. The Bones Of Orodrid, the fossilised remains of a huge sea creature, are central to the myth. Haunted by the size of the skeleton, a nomad tribe felt compelled to construct permanent cities in the relative safety of the hollowed bones.

Orodrid civilisation flourished under a system of trading based on tribes and families. In the skull of the sea creature the half-formed mystical beliefs of the nomads turned into the esoteric religion controlled by the Keepers of the Tsimit. Its customs centre around the fossilised brain cells of the sea creature, now transformed into powerful, beating crystals.

Those who wish to sit on Orodrid's council of leaders, a sort of futuristic Round Table, must become initiated in the secrets of the Tsimit by harnessing their own telepathic soul-mate: a crystal horse – the crystallion.

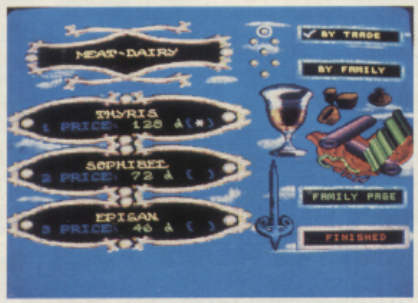
To rule a culture, you need to acquire its skills. Hatching your crystallion egg is a tribal as much as a personal matter and involves all aspects of Orodrid life. A successful knight will have taken part in all five essential Orodrim disciplines as many times and in whatever order he considers it best...

He who wishes to penetrate the secrets of Orodrid must pass successfully through the four veils, or mazes, of the Tsimit. The Keepers provide you with a charged Crystallion Suit and a powerful weapon designed to annihilate most of the creatures of the underworld. Any crystals collected prove useful later on.

Your Crystallion Suit has only three charges (lives). Should you fritter them away carelessly in the passages of the Tsimit, you can recharge the suit at the Proda using the power of the crystals already found. The energy of two or more crystals touching one another on the floor generates a power pulse. By changing their position and formation the beams are directed at the moving prods (collectors) in the centre of the room and thus into the suit.

Beam patterns need to be continually altered as the prods move around in complex formations. Stay too long and one of your crystals may get nabbed by a descending Cripid.

To keep your family, the Adreni, healthy, you need to keep a sharp eye on the prices in the Haresh market-place. It's up to you to set the prices for your own commodities, open new markets, and cope with financial crises in other parts of the tribe. Decisions are based on Haresh information about your competitors' prices, your projected expenses and your family's needs. Donations to the Tsimit are essential – otherwise you may not be granted access to some of the veils.

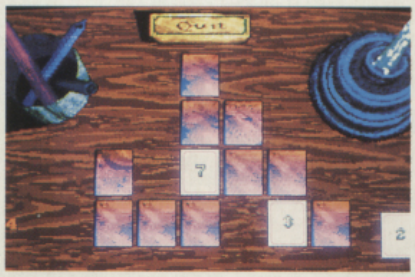


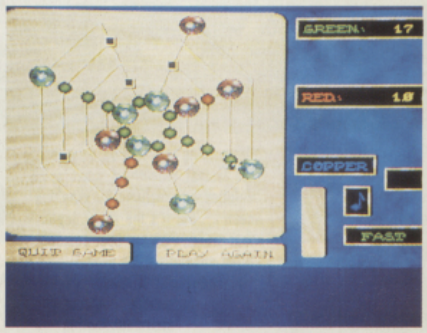
Buying and selling are your responsibility. Exactly what products you buy and in what amounts per season can be reviewed at any time.

Orodrid culture is a series of open doors through which you may pass at any time. Recommended first stop for beginners is the skeleton's focal point – the Tsimit.

rystallion

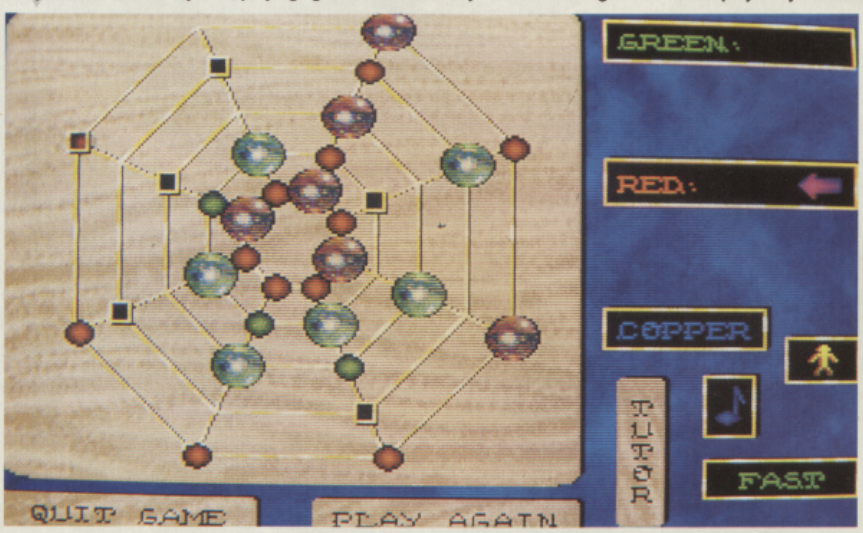
To communicate with your developing Crystallion you need to hone your telepathic skills by playing the card game Deketa. Basically it's a question of matching numbered pairs by responding to swift glimpses of numbers which appear very briefly on the backs of the cards. It gets harder as you progress – the cards shuffle themselves spontaneously into new and elaborate patterns.





Each time you complete a veil of the Tsimit entrance to the next one is gained by passing a Bosu exam. This unusual board–game, a sort of futuristic Nine Men's Morris, is played in two stages. First both players position their pieces alternately on the boxed intersections of the board's rays and rings.

The objective is to win as many empty intersections as possible by bracketing them in stones of your colour. When all the pieces have been placed, the captured intersections are marked out. Whoever gains the most, wins. You can practice Bosu at any time, playing against three difficulty levels – even against a human player if you wish.

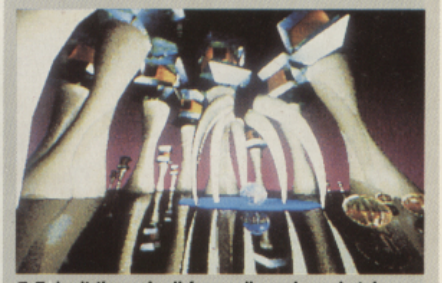


NO PLACE LIKE HOME

Bill Williams (who hangs out in a geodesic dome in Michigan) drew inspiration for Knights Of The Crystallion from the novel **Always Coming Home** by Ursula Le Guin. The story, like the culture of Orodrid, centres on a people called the Kesh who 'might be going to have lived a long, long time from now' in a valley in North Carolina.

It describes every aspect of these people's lives in great detail, chronicles their songs, their poems and their music, even their clothes and the kind of pets they keep. It comes complete with a dictionary of a language that has never been spoken and even has its own soundtrack: a full-length cassette of music from the valley, specially compiled, is available separately.

It's not the first time that someone has invented a completely fictional culture. Tolkien's Middle Earth has to be among the most famous though there are countless others – Herbert's Dune, Asimov's Foundation and Greg Bear's Way in the novel Eon. Some, like Lord Of The Rings and The Hobbit, have even had games written about them (a Dune license is to follow soon from Virgin Mastertronic). Knights Of The Crystallion is one of the first to actually attempt to simulate the cultural process itself.



Make it through all four veils and you hatch your Crystallion and gain that much-coveted Orodrid Council seat. How well you perform throughout determines how high up in the chamber you sit.

A

The idea of a culture simulator is an original and intriguing concept. It's also a huge undertaking – how can one game possibly convey the texture of a totally self-contained world? Bill Williams has side-stepped the problem by creating a series of loosely connected sub-games and relying on the player to weave them into a whole – and for the most part it actually works. The majority of the sections are well designed and have enough depth to draw on a selection of widely different skills. Bosu and Deketa in particular work as two outstanding budget games in their own right, and it's a characteristic of how well the whole package is presented that there should be a practice mode and an optional two-player Bosu game. In fact, the only section which really lacks originality is the one that takes the longest to complete – the mazes of the Tsimit. Despite the raw and unusual graphics, wandering through endless interconnecting passages lobbing fireballs does have a limited amount of appeal. As for the sense of another culture – two minutes listening to the amazing soundtrack, randomly generated every time (and there's a further cassette included), is enough to convince you that you are in another world. Highly recommended.

PRICE	£29.99
RELEASED	May
GRAPHICS	83%
SOUND	95%
PLAYABILITY	85%
VALUE	82%
OVERALL	**81%**

ST

Knights Of The Crystallion was designed specifically to make the most of the graphic and sonic capabilities of the Amiga, so until the STE starts selling like hotcakes, there's little hope of an Atari version.

PC

What's true of the sonic potential of the ST is even more applicable to the average PC, so there isn't going to be a PC version either. Anyone hungry for cultural stimulation will just have to read Ms Le Guin's book.

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"Astounding just to look at, with the fastest, smoothest, most detailed and realistic 3D graphics seen ... but it's the sheer depth that makes F29 the best combat/flight simulation I've seen. The wealth of missions is incredible ... giving enormous lasting appeal ..." C & VG 97%.

ZERO HERO

"Think of what you get in Falcon and double it ... brilliant action and a scenario depth that'll leave you gasping in awe; there are 99 different missions ... Retaliator is even better than Falcon, and it's certainly much bigger ... A brand new, and rather brilliant fighter/bomber simulation." Zero 94%.

"Utterly mouth-watering graphics and an amazing depth of play ... the best flight simulation I have ever seen (and there's nothing on the visible horizon that looks set to come close). It's not a simulation, it's an experience ... Ocean's first flight sim in the best out!" Zzap 97%.

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Castle Master

Castle Master features Freescape's first animated introduction sequence, during which there's the option to play a prince or princess. Assuming you choose the prince, Magister sends out a great bird which grasps your twin and removes her to a high tower in the distance.

Incentive's king of this castle. And who better to venture through its latest Freescape (TM) frolic than that dirty rascal Gordon Houghton.

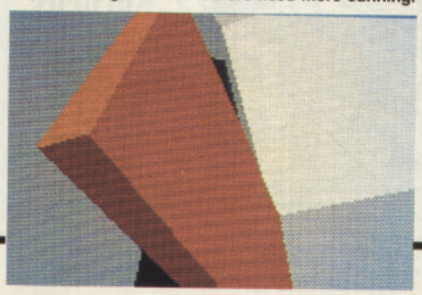
Magister, shaman and sage, Lord of the Old Time, is 13,000 years old and very angry. Generations of humans have tried and failed to establish colonies on the hill he inhabits: every time a settlement was built, he destroyed it. Unfortunately, he lost concentration and fell asleep for five hundred years, during which time the Normans came along and built a castle.

One day, one Norman decided to dig beneath the hill, and the noise of the work woke Magister from his slumber. He flew into a rage, meaning to destroy them – but the sleep and the castle itself had sapped his power, and people only laughed at him, forcing him to live in a hut outside the walls. But like all villains, he twirled his moustache and plotted his enemies' downfall: on the night of a great feast he turned them all into benighted spirits, under his command, and became master of Castle Eternity.

One year ago today your twin, tired and hungry, looking for a place to rest, was wandering outside the castle. They have been missing ever since...

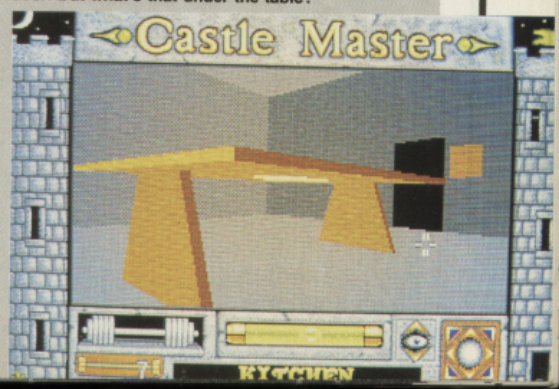
The portcullis announces the beginning and end of every game. Castle Eternity lies in the distance surrounded by a moat, but don't try swimming it – if you don't drown the sharks will get you.

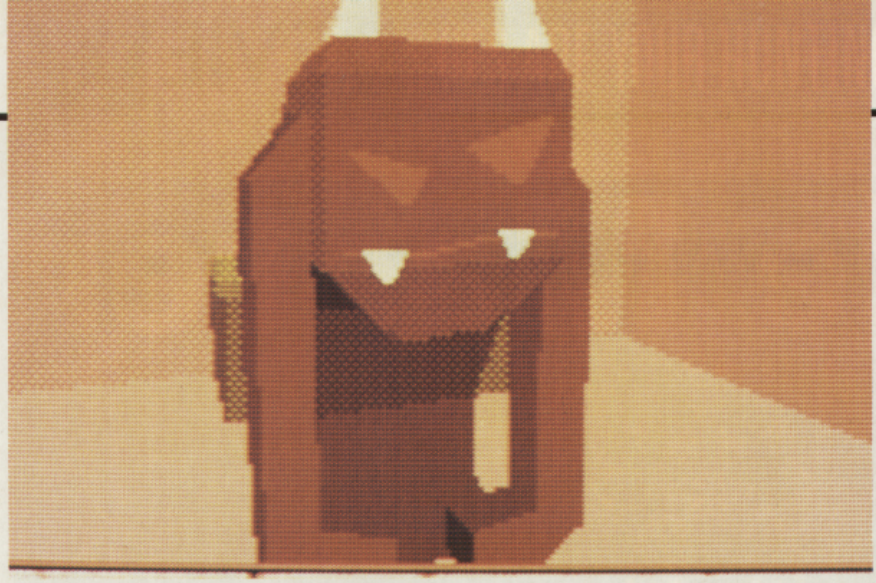
Once you suss out how to get inside, you step over the drawbridge into the gatehouse, where this huge slab rises and falls like a guillotine. Castle Master contains many physical obstacles: some (like this one) require timing to avoid. Others need more cunning.



Turning around you espy a yellow object on the wall. On closer examination, it appears to be a welcome message from Eternity's undead occupants. Clues and messages are vital to success, but lurk in the castle's most secret places and become more cryptic as you progress.

This enhanced version of Freescape (TM) has the dimensions of an adventure game because it uses an 'action' command to perform subtle tasks, such as unlocking doors or drinking from bottles. Wandering into a nearby tower, you find a kitchen with a fireplace, table, some cheese, and a key hanging on the wall. The cheese restores strength – and the fireplace gives more food for thought. Examining the key more closely, you learn it allows access to Igor's room next door. But what's that under the table?





With a deep breath, you open the door to Igor's room - to be greeted by flashing lights and a high pitched whistle. Not only is Igor extremely ugly, he also drains your energy, so it's time to use your slingshot to send him to spook heaven. Other ghosts aren't so easy to dispatch, and some of them flit around in erratic patterns - so it's a good thing you have an unlimited supply of rocks.

Naughty old Igor was guarding a chest with a key and two gold coins in it. Treasure simply increases your score – other items to be found include crystals, a crown and a sceptre. Unfortunately, this key is unmarked so you just have to work that one out for yourself. If you get really stuck, you can actually complete the game using only seven of the 10 available keys. But, of course, you don't get maximum points...

A KNIGHT TO RE

Castle Master is the fourth 16-bit Freescape (TM) release, and features a big leap forward in terms of size and gameplay. Ian Andrew, game designer, co-ordinator and head honcho at Incentive, confesses: "It's by far the biggest game we've ever done. There's more emphasis on detail and features: before you could only bump into things and fire at them – now you can 'action' objects as well: read, examine, move, unlock, close, or open something according to the situation. With some objects you have to make a decision whether to action them or throw rocks..."

Previous Freescape (TM) games were 8-bit led, with the 16-bit versions running faster and featuring moderate embellishments. Castle Master is different – the choice between action and weapon hands, for example, was made for a mouse. It's not the only enhancement: "The old screen size was long and thin: this one is 20% larger." The game as a whole is almost five times bigger than any other previous Freescape (TM) product: not only are there over 100 locations, but every room contains twice as much detail as before.

So how does a new game begin? Game design and mapping are worked out on paper first – a long and contemplative process. Next comes some basic programming: "We start with a load of empty data areas, which are built up and joined together." After some groundwork on assemblers, all this disparate information eventually finds its way into Incentive's custom-designed editor, the BTRE (short for Being There Runner Editor). Unavailable on earlier Freescape (TM) product, it allows more scope for creative input and design, the means for altering the game's parameters at will.

Processing time is the only restriction to creativity: the program is speed intensive, so there's always a trade off – speed for detail. "With about 15 objects on screen at any time, there's little problem: but get to 25 or so and the slowness becomes unacceptable." Most of the major design work is done on the PC, but because all the machines have different capabilities in terms of number of available pixels and colours, final tweaks are performed on individual machines.

Music is almost always one of the final considerations, but isn't treated as an afterthought. For Castle Master Teque was briefed on the game's style, content and atmosphere – and the result is a five-minute digitised soundtrack taking up 80K, with a few samples thrown in for good measure.

Incentive likes to take time over their projects (it releases only one game per year), so the next one won't appear in a hurry.

Introducing the kings of the castle: Sean Ellis (creator of the ST and Amiga editors), Andy Tait (General Operations Manager and Sales Director), Paul Gregory (ST/Amiga programmer), Chris Andrew (PC and 8-bit programmer) and Ian Andrew. Not appearing here but also starring is Mike Salmon, who deals with the graphics and data.

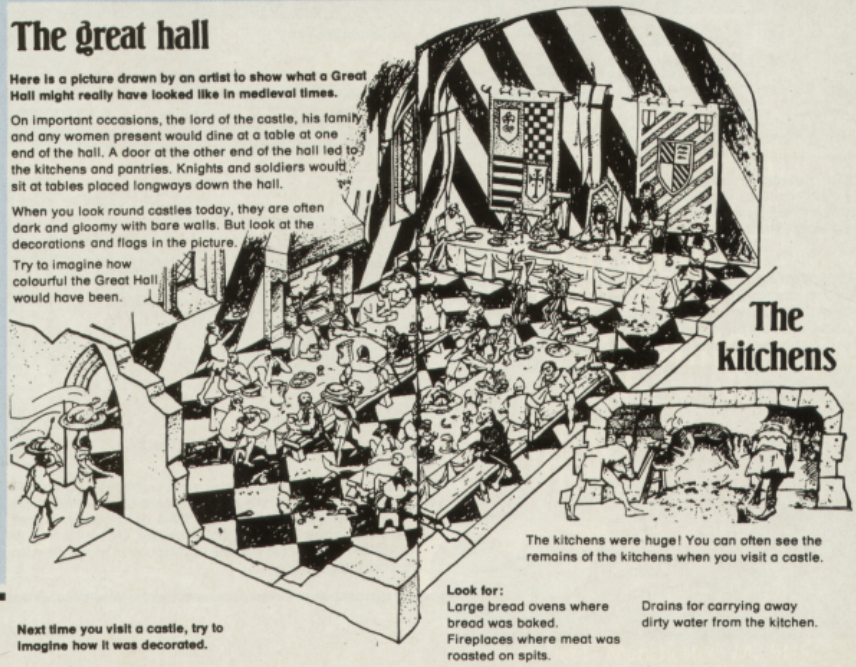
The great hall

Here is a picture drawn by an artist to show what a Great Hall might really have looked like in medieval times.

On important occasions, the lord of the castle, his family and any women present would dine at a table at one end of the hall. A door at the other end of the hall led to the kitchens and pantries. Knights and soldiers would sit at tables placed longways down the hall.

When you look round castles today, they are often dark and gloomy with bare walls. But look at the decorations and flags in the picture.

Try to imagine how colourful the Great Hall would have been.



Next time you visit a castle, try to imagine how it was decorated.

The kitchens

The kitchens were huge! You can often see the remains of the kitchens when you visit a castle.

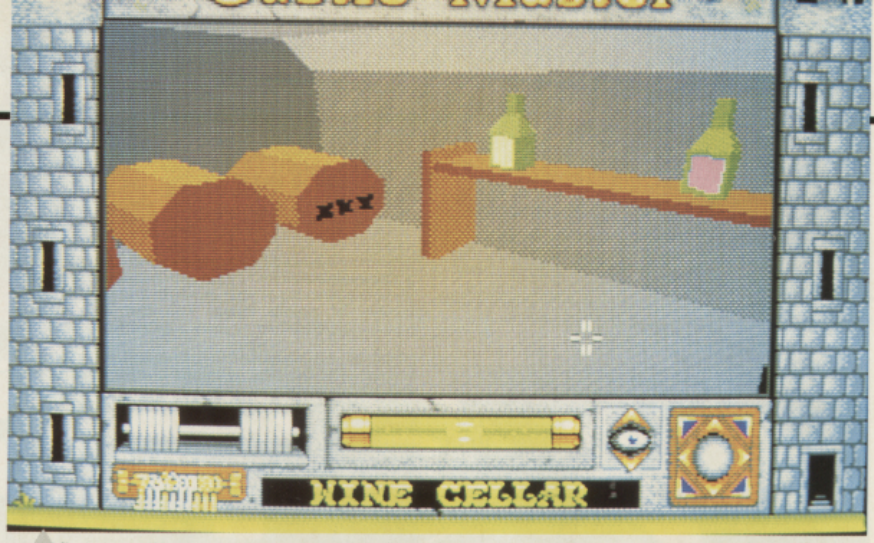
Look for:

Large bread ovens where bread was baked.

Fireplaces where meat was roasted on spits.

Drains for carrying away dirty water from the kitchen.

Outside the castle you find a boulder, but it's too big to push aside - isn't it? No, but it needs a lot of effort. Moving it reveals a hole, which you cautiously crawl into...

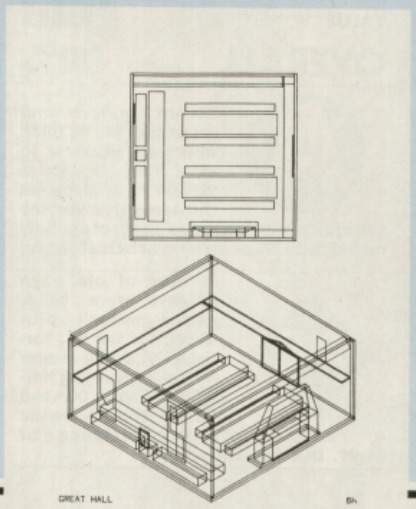


And find yourself in the catacombs. This is just one of the many ways of entering this vast underground maze of chambers. Adjusting your eyes to the light, you spot a pink pentacle in the distance - you need ten of these to open the pentacle vault, which contains more gold than you ever dreamed possible and, more importantly, the key to the final chamber. Wandering further in the catacombs you stumble across this wine cellar, where you find a cask of 'XXX' and a few bottles. Some bottles contain alcohol, some hold potions which give special powers, and others are empty or poisoned. It's not a good idea to break anything until you use the action hand on it.

EMEMBER

The introduction and closing sequences and the in-game information screen were all designed on DPaint III. This is Magister – time-traveller extraordinaire and power-crazed lunatic. The star patterns at the bottom represent the animation of his destruction.

Inspiration comes from many sources: Incentive took a long, hard look at fortress literature and design before coming up with Castle Eternity. The 3D vector map of the Great Hall bears strong similarity to the artist's impression found in one of their reference books: note the relative positions of the door, tapestries, fireplace and benches.

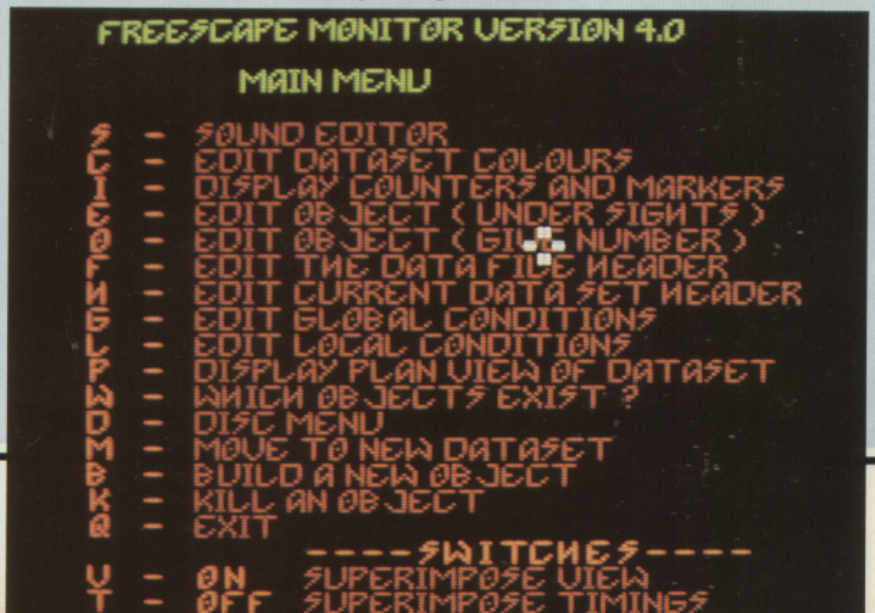


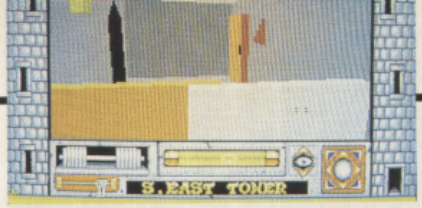
Data sets for individual clumps of information are worked out on paper, detailing item layouts: scaling factors, debug flags, data composition, animation controls and view selection.

```
-----------------------------------------------------------------------

ITEM LAYOUTS

In all of the following items, the first byte (the item type) has the
top four bits reserved as follows:

        bit 4 - reserved for program use
        bit 5 - 1 = item destroyed
                0 = item not destroyed
        bit 6 - 1 = item invisible
                0 = item visible
        bit 7 - default setting for bit 6

Rotations are defined as follows:

          X axis                          Y axis
     =    up/down                         round

      0 = straight ahead              0 = north (back)
     12 = straight down              12 = east (right)
     24 = behind (upside down)       24 = south (front)
     36 = straight up                36 = west (left)

                ---------------ODO---------------

Entrance:       Byte 0 - bits 0-3 item type  (0)
                         bit 7 should be 1 to indicate not visible
                     1 - x coord on entry (0 to 127)
                     2 - y   "   "   "   (0 to 63)
                     3 - z   "   "   "   (0 to 127)
                     4 - x viewing angle on entry (0 to 71)
                     5 - y   "   "   "   "   (0 to 71)
                     6 - not used
                     7 - item number (1 to 254)
                     8 - data length (9)

PDO data:       Byte 0 - bits 0-3 item type  (0)
                         bit 7 should be 1 to indicate not visible
                     1 - number of 1st PDO
                     2 -   "   "  2nd  "  (0 if none)
                     3 -   "   "  3rd  "  (0 if none)
                     4 -   "   "  4th  "  (0 if none)
                     5 -   "   "  5th  "  (0 if none)
                     6 -   "   "  6th  "  (0 if none)
                     7 - item number (255)
                     8 - data length (9 to 250)
                     9 - number of 7th PDO
                         etc..

Cuboid:         Byte 0 - bits 0-3 item type (1)
                     1 - x coord of origin (0 to 127)
                     2 - y   "   "   "   (0 to 63)
                     3 - z   "   "   "   (0 to 127)
                     4 - x offset of cuboid (1 to 127)
```

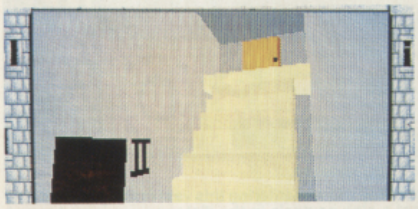
The editor also allows its user to play the game at any time to study how smoothly the program is running – in this case, it's the hot baths. An overlay in the top left hand corner reveals the time used by each part of the processing: how long it's taking to move, draw the pictures, process them, sort them in order and calculate any overlap.

The BTRE's main menu allows access to any aspect of the programming, so that anything – sound, data, graphics, conditions – is easily changed. Selecting an area to be modified produces a 3D mini-image (in the corner) which avoids constant transfer between the object screen and its data file. Selecting an object brings up a wide variety of information, including its exact coordinates and how much memory it's devouring. Changing colours couldn't be easier: a simple modification to the object data allows any one of 64 shades (after blending) to be used. The basic palette incorporates 16 colours, which is also the maximum on-screen number. For this reason, PC versions of Castle Master won't be taking advantage of VGA mode.





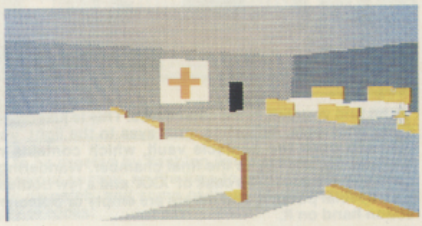
Further on from Igor's room, a barrier blocks your path. Some, like this one, are opened simply by pressing a green button – others require more complex input, and some buttons are out of reach, so you need to discover alternative routes. Pressing the button, the barrier slides open, and you take the door on the right which leads to the stairs.

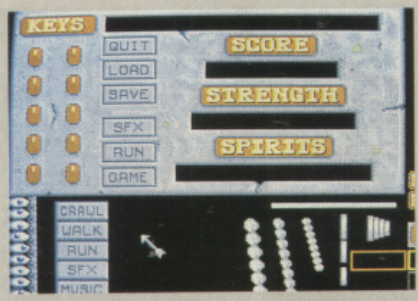


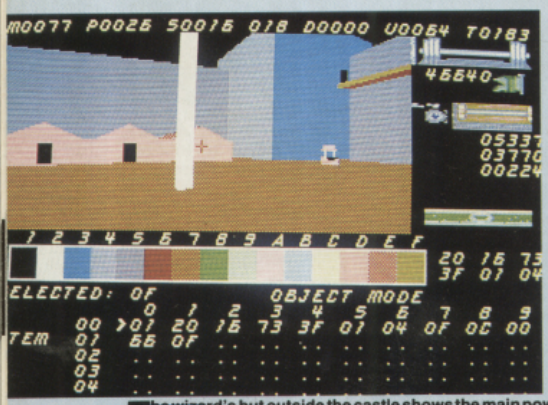
There are four floors on each of the four towers, some with up to four rooms in each: the Roman numerals on the stairways tell you which storey you occupy. Don't stumble off, though – falling too far depletes your strength.

The information screen updates your progress. You can examine all the keys in your possession, admire the score, wonder at your strength and gloat over the number of spirits killed. You can also change parameters and load or save a game from here.

If your energy is reduced to its final unit, you can't walk or run. The hospital provides a means to recover strength, but only enough to get you on your feet again. Once you recover, try leapfrogging the beds for a laugh.

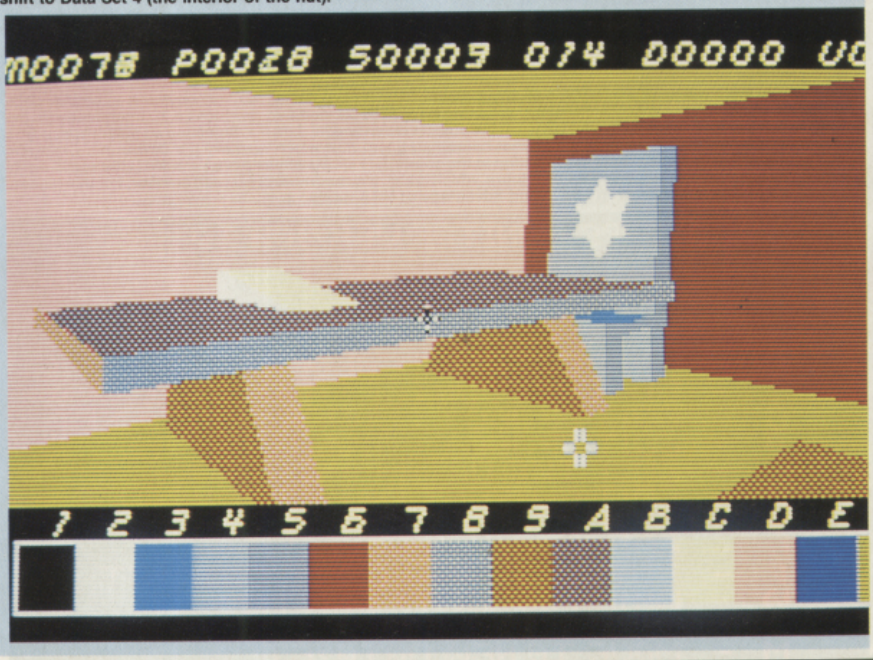






Editing data on the PC editor is a simple matter of changing values. For example, the figures at the bottom of the screen (written in hex) reveal the unconditioned data for the ledge in the courtyard. The initial number (1) states that the object is a cube (stretched out into a ledge). All objects are assigned numbers, and there are fifteen different types including pyramids, triangles and lines. The next three numbers show the object's co-ordinates in three dimensions, followed by a trio of figures revealing its length, breadth and height. Next comes the object number in terms of its screen position (F) and the length of the whole object (C – if it had conditions, it would be longer). '00' classifies it as not coloured at both ends (these areas aren't seen, so this instruction saves processing time), '66' determines its colour at the top and bottom, and 'F' determines the colour on one side (again, the other side isn't visible, so calculation would waste time). By altering these parameters you can do virtually anything: shrink, move, stretch, make it taller, change its colour, animate it. It remains the same object you selected, but it can be altered beyond recognition.

The wizard's hut outside the castle shows the main power of the BTRE: the ability to pick things up and move them about. It's very simple to create things: you can design a whole room just by playing around with objects, rather than having to type in lots of numbers. It also tells you what the object number is, its dimensions and its position in 3D space. The hut, like many of the Freescape (TM) designs, actually comprises more than one object, many of them repeated to save memory space: in this case the walls, roof and door are three different items. Conditions can be added simply by editing the data: so, for example, the door has the condition that if you enter it, the program will shift to Data Set 4 (the interior of the hut).



ST

Castle Master is the first Freescape (TM) game to be developed primarily on 16-bit – and it shows. It's far bigger than any of the preceding trio, with much more detail: over 100 rooms packed with puzzles, clues, potions, keys, food and drink, pentacles, treasure, ghosts and secret doorways – there's even a toilet in there. It's also given incentive the power to be more creative, so that the gameplay is less abstract and nearer to a traditional arcade adventure only rendered in 3D. Most of all, the use of the mouse to create two independent 'hands' adds a whole new dimension to the enjoyment of exploration and puzzle-solving, and makes for much greater realism. Castle Master scores highly on presentation, too: for the first time there's an animated introductory sequence, a choice of male or female characters (with subtly different gameplay for each), and the ability to complete the task without solving everything. The best aspect though, is the total freedom of movement and action within the game environment, and the fact that actions have consequences – try stepping on a piece of cheese and then eating it, or sticking your hand down a plug hole! Even if you weren't too keen on previous Freescape (TM) games, you should take a look at this one – it's easily the best yet.

PRICE	£19.99
RELEASED	Late April
GRAPHICS	88%
SOUND	79%
PLAYABILITY	92%
VALUE	88%
OVERALL	**90%**

A

Valiant princes and princesses will be filled with great gladness to learn that an Amiga version is available at the same time for the same price, with the added bonus of a goodly melody from those merry minstrels at Teque.

PC

In days of old when knights were bold, games weren't produced for the PC. Fortunately, Castle Master will be, supporting Hercc ules, Tandy, CGA and EGA – and all for the paltry pittance of 24.99. Due for release soon.

LOCK & LOAD

MAGNUM 4

AFTERBURNER – You've played the arcade smash – now experience the white-knuckled realism of a supersonic dogfight at home! Using your heat-seeking missiles and laser anti-aircraft fire, can you be top gun against supersonic swarm?
AFTERBURNER TM SEGA © are trademarks of SEGA ENTERPRISES LTD.

DOUBLE DRAGON – Join in deadly combat with the savage street gang of the infamous Shadow Boss. Use whatever weapons come to hand as you pursue the gang through the slums, factories, and wooded outskirts of the city to reach the Black Warrior hideout, for the final confrontation with the Shadow Boss himself!
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4 HIGH CALIBRE GAMES IN ONE PACK FOR YOUR ATARI ST/ AMIGA

OPERATION WOLF – "Not only has all the action and game play been captured, but so has the excitement, making it one of the most satisfying and compulsive shoot-em-ups to have appeared in a long time" ACE
Licensed from © Taito Corp 1988

BATMAN – The characters and backgrounds are striking – each are superlative – features a soundtrack in glorious remixed stereo" The One
TM & © DC Comics Inc 1988 All Rights Reserved

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DEMOS

Welcome once again to the wacky world of Demodom. Another brief stroll down Demo-y Lane, watching the animations, pictures, and music go by. If you have produced a demonstration of anything remotely entertaining on ST, Amiga or PC, then why not give it an airing through the pages of The One. The address, as ever, is: DEMOS, The One, Priory Court, 30-32 Farringdon Lane, LONDON EC1R 3AU. Please note: we cannot guarantee to return your diskettes unless you provide a suitable, stamped, self-addressed envelope (or preferably a Jiffy Bag).

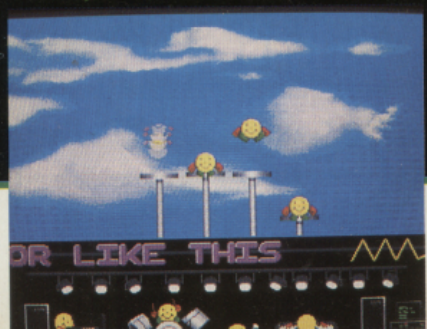
▲There's digitised AD&D artwork aplenty to be had here.

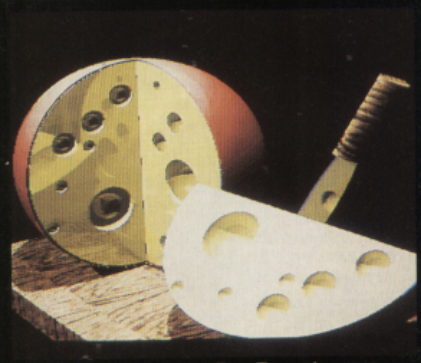
Since the last issue we had a flood of one letter saying we'd sadly misjudged the SO WATT demo on the ST. Apparently there was more to it than we thought – it's a shame there were no instructions to tell us otherwise. There are in fact 20 REALLY RATHER GOOD demos, including some NICE music and some VERY CLEVER raster trickery and text twisting usually only seen on the Amiga. In fact there are a lot of versions of ageing Amiga demos, including the Boing Ping Boom Chak demo from the Magician 42 and Sodan (Remember that?). This demo PUSHES BOUNDARIES, so don't miss it. By way of a complete turnabout, the 007 demo on the ST borders on REASONABLE. A SO-SO picture which doesn't change apart from a scrolly message, and a HIGH DEFINITION rendition of the JAMES BOND TUNE. Finally on the ST we have some SWISH ANIMATIONS – one of a skeleton doing a backflip, one of a digitised Japanese woman with guitar, and another one of a blocky humanoid tossing a disc. The animation is SMOOTH, even if loading the sequences by hand is a bit labourious. On the Amiga side this month there's an IMPRESSIVE, long-awaited NewTek demo, featuring examples from all their latest products. There's a lot of fun to be had here, but only for anyone with 1Mb Amiga and a second drive. If you like digitised fantasy pictures, then try 17 Bit Disk 578, which has loads of well-DIGITISED AD&D Forgotten Realms PICTURES complemented by TIDY MUSIC and a scrolly message. 17 Bit Disk 581 is a QUALITY collection of RAY-TRACED PICTURES, although this slideshow only really comes recommended to PIXEL PERVERTS who get their kicks from tasty textures. Videos on the other hand, on 17 Bit Disk 572, is a WATCHABLE selection of clips from FAMOUS pop videos, with a bit of Baywatch (HUBBA HUBBA) and Beverly Hills Cop thrown in for good measure. And it's all set to a mediocre rendition of Erasure's Sometimes. Last but not least, on this month's Newsflash Disk Magazine (well the support disk, actually) we have a trio of INTERESTING demos. Firstly there's the Thrust 3D Ping-Pong demo, where you have to try and play a game of ping-pong while the table flips over and over. Secondly, there's the Celtic Megademo, which is more demo than mega. And finally, there's the third bit, which ranks as DEMO OF THE MONTH... The Poi-Poi Demo. Poi-Pois are little fluffy PacMan-like creatures which bounce around on top of the VU Meters while a band plays along to the music. The animation and character found here add PLENTY OF POLISH, and especially impressive are the VU Meters that pop up in the scrolly message from time to time. MORE like this, please!

▲Yeum! Baymatch butts bounce (above) and Beverly Hills Banter (below).

▼A polygon animation to discus (ha!).

▼Bouncy fun with the Poi-Pois.





▲Resplendid raunchy Ray-Traced romps.

GETCHA DEMOS HERE!

AMIGA

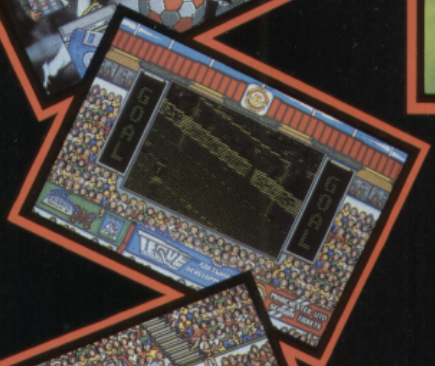
Videos, The NewTek Demo Reel 3, Forgotten Realms Slideshow and the Ray-Traced pix are available from 17 Bit Software, PO Box 97 Wakefield, WF1 1XX. Tel: (0924) 366982. Newsflash Issue 8 and others are available from Newsflash UK, 25 Fairfield Mount, Ossett, West Yorks. Tel: (0924) 265593.

ATARI ST

The Skeleton, Scanned and Humanoid animations, and the 007 demo are all from the Other PD Library, 108 Kenmare Road, Wavertree, Liverpool, L15 3HQ. The So Watt demo came from MPH, 10 Chandlers Court, Eaton, Norwich, NR4 6EY. Tel: (0603) 503382.

IBM PC AND COMPATIBLES

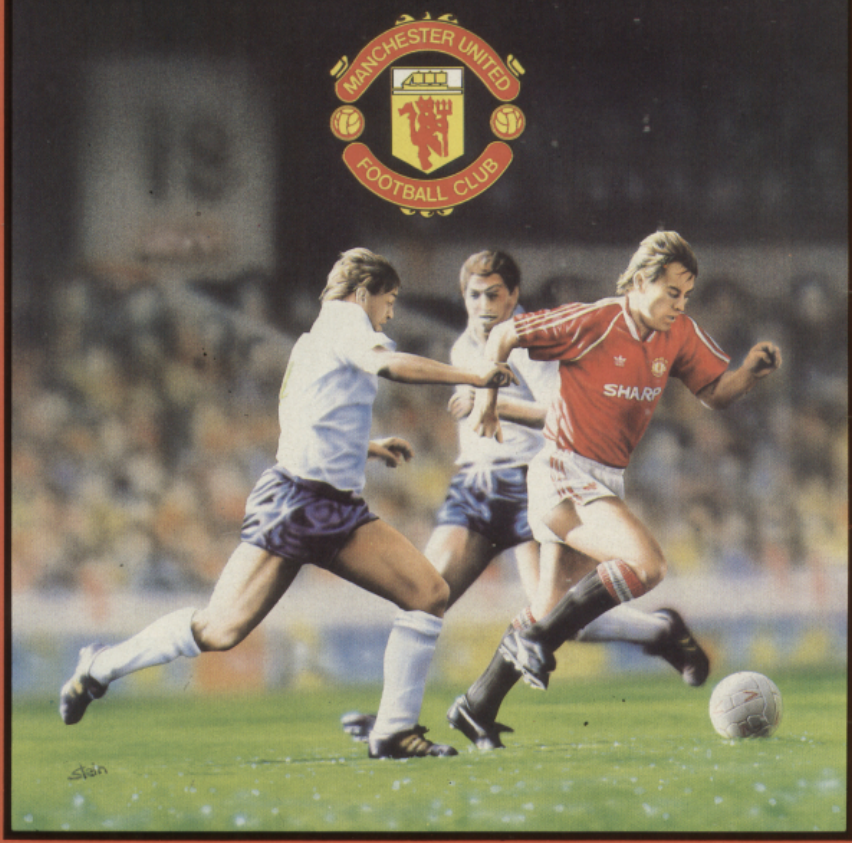
Nothin' doin' on this front. Come on all you MS-DOSsers – give us your best shots!



SCREEN SHOTS FROM AMIGA VERSION.

KRISALIS SOFTWARE LTD.

MANCHESTER UNITED



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KRISALIS SOFTWARE, TEQUE HOUSE, MASONS YARD, DOWNS ROW, MOORGATE, ROTHERHAM S60 2HD

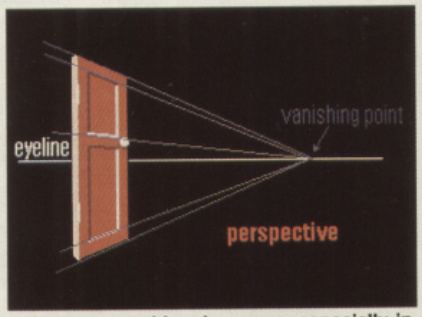
GraFix

Carrying on last month's theme of 'it's good but is it art?', Phil South takes us into real perspective drawing techniques to make your creations pixel perfect.

The funny thing you start to notice with computers these days is that they are being used more and more to draw on. For fun or for profit, it doesn't matter, but more people every day are taking up the mouse rather than the pen. Or even the sword. But let's not get philosophical – we want to talk about graphics.

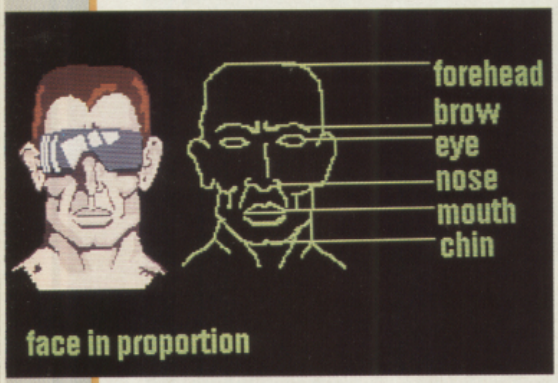
Many years of experience are needed to become a professional illustrator, but few computer artists have that background. But still the techniques used in ordinary artwork apply to graphics on a screen. If your art training is zero then how about buying yourself a book (or get it from the library) on drawing? It should be called something like 'How To Draw And Paint Really Good' and have lots of 60s style drawings in it (there's a good reason for this, as these books were popular in the 60s and no–one seems to have done one since). Then check out all the simple mechanical rules they set down for figure work and perspective, that sort of thing.

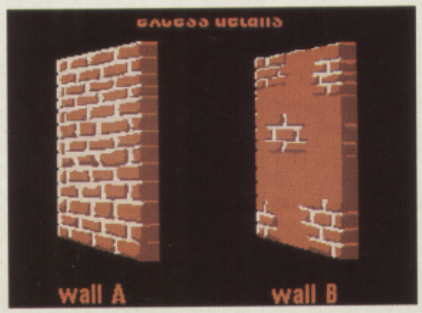
It's not all hacking away at the screen, you know. You have to have some input to get output. And besides – it's nice to get away from the computer occasionally. To read The One, for example.



A common problem in games, especially in backgrounds, is that of perspective. Most artists who draw backgrounds for animation movies are skilled artists using techniques learned over years of practice. But simple mechanical techniques can improve your artwork if you know them. In perspective for example, horizontal lines below your eyeline slant up from front to back, while those above your eyeline slant down. To construct this on screen, draw a line in the centre of the screen to be your eyeline, then any horizontal lines can be drawn out from the 'vanishing point'.

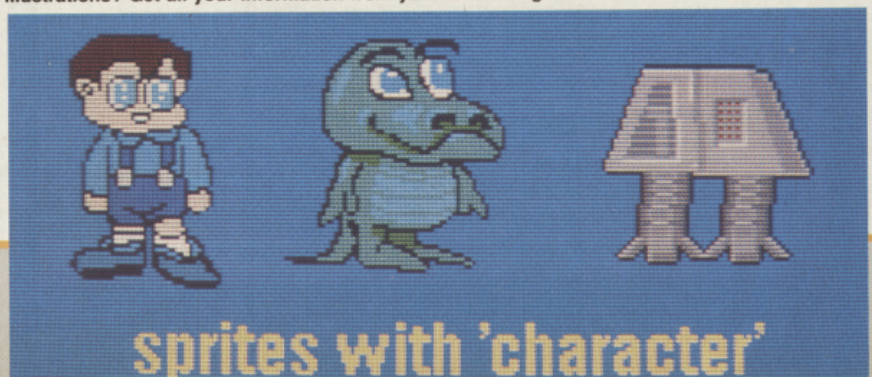
Another gaming problem, this time concerning title screens and the like, is unrealistic proportions on faces, which probably explains why faces are always so small in computer art (people are afraid to draw in case the results ain't so good). Try these simple rules to form the basis of face drawing, and see how it improves the images you work on.





Talking to Dave Gibbons last month, he mentioned that in his opinion computer artists put far too much detail into their work. For example a trick he likes to do with walls is instead of putting in every single brick or particle of texture, he puts a little bit of detail here and there. Your eye can't see if there's too much detail, and it's a popular trick to focus your eye on the main action, which IS fully rendered.

Due to the rise in game consoles of the past few months, the platform game has undergone a kind of rebirth. The Japanese are past masters at creating cute arcade games that keep you going back for more, no matter how silly they are. Think about your main character in your game. Is he cute? Can he match up to Dynamite Dux, Psycho Fox or Penguin Land? Try checking out the characters in popular games. What makes them so appealing? Are they line drawings or fully rendered colour illustrations? Get all your information from your favourite games.



PIXEL PATTER

This Month: Herman Serrano

On the subject of perspective, it's best to talk to someone with a slightly odd one. And who better than Herman Serrano, the artist behind last year's splendid nightmare adventure game, **Weird Dreams**. The game grew, he says, out of ideas for surreal paintings, and: "I just sort of put little twists to them, and then strung 'em all together in a game."

Herman has been quiet of late, but as you saw in the December 1989 issue of The One, he's back soon with **Atomic Lunch**. However, he's also got some new ideas up his artistic sleeve...

How do you go about doing perspective drawing in your art?

"I don't tend to use the computer for that. I use more sort of traditional methods. You know – you have your horizon and your focal points that you emanate from, and just work it out like that really."

So you don't sort of just look at the screen and guess?

"I think you CAN do, actually. You get a pretty good idea. You know roughly where you want your vanishing points to be, and you can make a pretty good guess."

How about proportion and distortion effects? How do you go about doing those?

"Oh, there's things like a wide angle lens view, yes? I think that's just a case of looking at photographs and seeing how they do actually distort. It's like looking in the back of a spoon or something (Did someone call? – Mr Spoon)."

Do you use much in the way of photographic reference then?

"Yes, I do. I've got a library close at hand, so I tend to nip down there. I spend the afternoon looking through all sorts of books on the kind of things I'm after, then try to mesh all the ideas I've got together into something more concrete."

Did you use much reference material for Weird Dreams?

"That's difficult to answer. For that game I suppose it's small details as opposed to a whole. The whole thing had to have a kind of surreal feel to it. I mean if you pinpoint things it's like the cracked mud effect in the desert, I have to get some kind of reference for that. As far as the whole thing goes the reference was out of my head, I suppose you could say."

How did you get into graphics on computers?

"I was at Kingston Poly doing a foundation course, and there were some guys there doing computing. A friend of a friend had mentioned me to them, and they said come along and I ended up doing one of the demo screens for Art Director. And then working on a thing called Ancient Mariner, that turned out to be a real flop. But then I did a whole load of art screens and they got published in C&VG. There was no game, but they got very excited about this new game."

What are you working on at the moment?

"A thing called Atomic Lunch, that you know about already from that spread you did on it. Oh yes, and I've got another games design called To Kill A God. I'm not entirely sure about the kind of format for that, I see it as a kind of more animated Dungeon Master. But I've yet to talk to some people about the technical side of it. At the moment it's just a sort of general games design without any of the specifics. Just a scenario more than anything."

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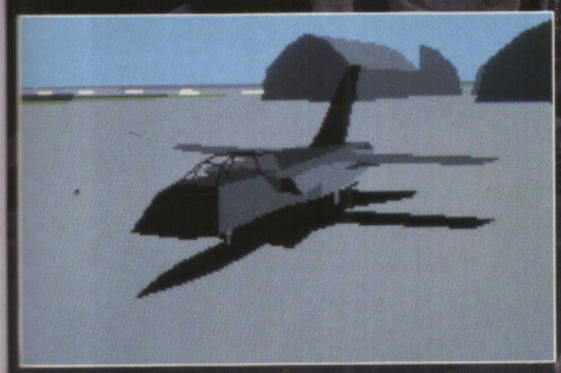

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ARCADES

THIS TIME IT'S WAR

Eugene Lacey flies high with Taito, shoots low with Konami and jumps for joy with Jaleco.

An end of level alien. Pump him with flak till his head comes off.

It doesn't seem like the ideal time to release a coin-op based on James Cameron's Aliens – does it? Both of the home computer conversions have been and gone, the video's had its time in the chart... in fact it would seem that not only has Konami missed the boat, but the port's been closed down and turned into a shopping centre. Anyone however, who isn't worried about a game taking four years to reach the arcades should be well pleased with this corker of a movie adaptation.

The story goes that Commander Ripley and her team return to a derelict space station after communications with the crew are mysteriously cut. And of course, more destruction than is possible within the space of two hours soon follows.

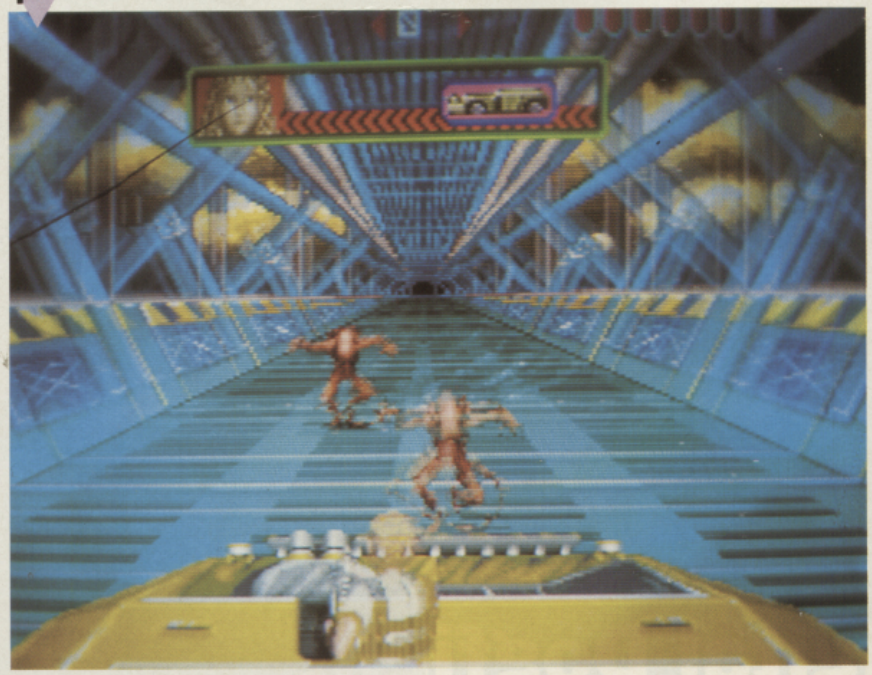
As Ripley, you explore the alien-infested complex while the creatures emerge from all round. You need to grab every power-up you can get your hands on to survive. Some aliens are only hatching out of their eggs, so it's wise to blast them before they become fully grown.

As you'd expect given the time Aliens: The Arcade Game has taken to arrive, Konami has managed to capture the atmosphere of the film perfectly in its adaptation. A series of stills from the film have been digitised at the beginning of the game to get you in the mood. But the best feature has to be the use of those meaty weapons – they really get you in the mood.

Oh, and one last thing. Why is it in the first film one Alien wiped out the entire crew (who were armed with flamethrowers), but in the sequel the Marines manage to take out hundreds of the suckers? Think about it...

Destroy the eggs before they hatch into aliens.

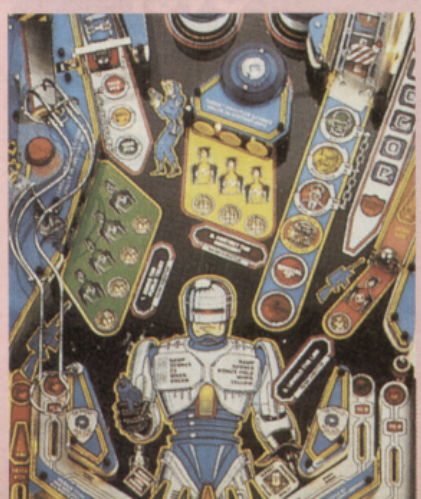
The action alternates between 3D and horizontally-scrolling sections.

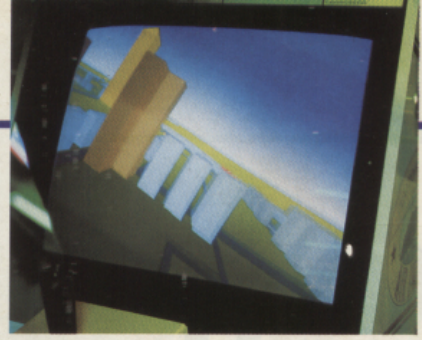


PINBALL SPOT

Two of the latest pintables to astound and delight are Data East's **RoboCop** (licensed from Ocean) and Williams' **Elvira: Mistress Of The Dark**. RoboCop's most notable feature is a ball jump ramp – with extra points to be had if you get enough power behind the ball to make it jump the gap successfully.

Elvira on the other hand, features a host of digitised speech recorded by the buxom beauty herself. Apparently she's delighted with the pintable. Williams gave her six of them – she gave one to her Mom and the others went to charity!





TALKING CHOPPERS

The use of sampled speech in coin-ops has never been much more than a frill – up until now it's been included purely for cosmetic reasons, rather than to enhance or add to the gameplay in any way. But all this could be about to change, thanks to Taito's **Air Inferno**, the latest sit-in hydraulic simulator to appear on the scene.

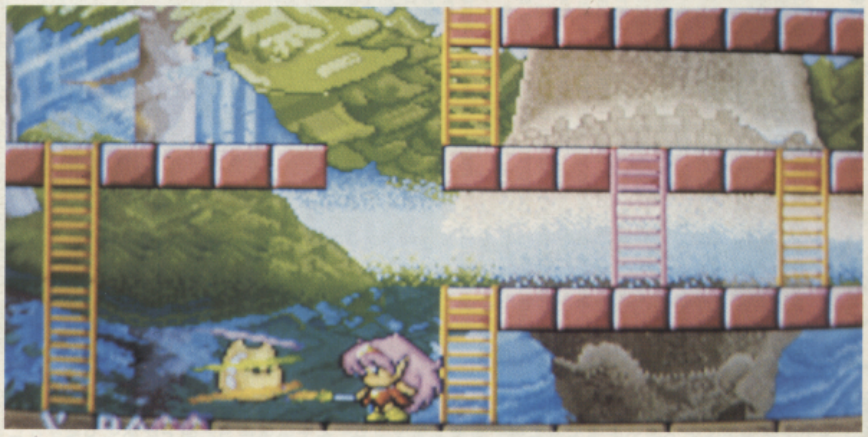
The padded seat, foot controls and levers make it more of an experience than a game as you aim to carry out four progressively difficult missions, viewed through the cockpit of a rescue helicopter.

Your first mission asks you to put out a fire on board an oil tanker far out at sea. From take off to arrival at the scene your instructions are voiced to you by ground control. But it's not just a navigational aid – it comes in handy for the novice pilot too. If you fly off course the sampled speech tells you to bank left or right. You are also given precise instructions what to do when you arrive at the scene.

By far and away the best of the four missions is the Towering Inferno challenge where you have to rescue the office workers from the roof of a burning skyscraper and then extinguish the fire before it gets out of control. Other missions include rescuing explorers from an erupting volcano and a battle challenge in the desert.

Air Inferno has a massive flat screen display which allows a great deal of detail to be displayed – and the graphics are exquisite. It's sure to be a summer hit in the larger arcades (but only in the larger arcades – this machine is a monster). Even at 50p a ride it's well worth a try. Get rescuing!

IT'S TRIFFIC & JOLLY!



T&J uses his magic rod to capture a nasty. It's so cute you are likely to fetch your dinner up playing it (well, almost).

A cute game to rival the hellishly addictive gameplay of **Rainbow Islands** arrives courtesy of Jaleco. T&J are two Japanese kids with eyes as big as saucers and a mission to rescue their Mom (aaah). Like most games of this type, doing so involves cavorting about over a series of platforms and ladders.

T&J move around the platforms by creating ladders at the press of a button. Flowers grow out of the platforms and T&J pick them up for bonus points as they attempt to clear one level before moving to the next.

Naturally there are plenty of bad guys, including Crocodiles and Dolphins – but none of them are as friendly as their cute complexions suggest. Thankfully, a trusty magic rod allows T&J to freeze them and then swing them around the platform to kill them. The best method is to pick up the creatures and smash them down on the floor of the platforms – perhaps bashing another nasty in the ground at the same time.

When the level is clear the screen scrolls on to the next platform stage. Your ultimate aim is to reach the top of the Maboots tower where your Mom is held.

It's all very silly of course, but at the end of the day it's very playable – just like the rest of the games of this ilk. Completely brilliant and worthy of conversion. Need we say more?

ARCADE NEWS

After last month's speculation, Elite has confirmed that it hasn't got the conversion rights to Tecmo's **World Cup 1990**. But that's all the Lichfield-based company would tell us: it's still loathe to reveal the names of any licenses it has acquired – well, at least until the European Trade Show at Easter.

Arc Developments, who did US Gold proud with its conversions of CapCom's **Forgotten Worlds** and Sega's **Crack Down**, has begun converting Data East's **Midnight Resistance** (see Arcades Issue 15) to ST and Amiga for US Gold. A full Work In Progress report will follow in due course.

Following last month's revelation that Electrocoin is producing its own home computer conversions of arcade games, here's how one of its first releases is shaping up... SNK's **Time Soldiers**.

STEEL BALLS AND FLIPPERS

Ever since she was a young girl, she's played the silver ball. So who better than Kati Hamza to tell us all there is to know about coin-operated machines of a different sort: pinball – including those small screen reproductions.

Are you a pinball wizard? Or do those hard steel balls just get your flippers in a twist? Can you tell your mushroom bumper from your rubber nuts? Have you ever questioned the effectiveness of a bumper coil? Pinball is a pastime as American as Baseball and Mickey Mouse. It survived the depression and shared counters with barber's shop quartets. It exploited the electronic revolution, and when PacMan gobbled up the arcades, the little silver ball still managed to survive. So where does it come from and what's it got to do with pins?

A MERE BAGATELLE

Chicago. Famous for gangsters and the Speak-easy. It's also the place where pinball was born. Coin first hit slot in the 1920s when that gentile parlour game, Bagatelle, was introduced into saloons and barbers' shops across North America. These early machines had balls, but were weak on pins. The first combination of the two didn't arrive until 1930 when David Gottlieb released his master stroke – Baffle Ball. It was an instant success: more than 50,000 machines were sold in 1931.

Not that the industry's granddaddy looked anything like the electronic machines in today's arcades. Baffle Ball and its clone Ballyhoo (produced, appropriately enough, by Bally) were wooden countertop games. They had no flippers, no electricity, no bumpers and no artificial sound. Balls were aimed at five high-scoring holes in the centre of the play area. If they missed they rolled into one of the lower-scoring pockets at the bottom of the board. As for the 'pins' – they were a ring of nails positioned to surround each scoring hole.

By 1933 pinball had proved so popular, most machines had legs and some made use of batteries. Williams' Contact was a two-fold pioneer. It was the first to use batteries to operate an electrically solenoid kicker (which ejected the ball) and it was also the first to use sound – the kicker rang a bell!

With the advent of transformers and access to mains electricity supplies, pinball turned on its lights. Overnight, illuminated target games like Genco's Bang became state of the art. But state of the art wasn't enough: by the middle of the decade pinball-mania was fizzling out. The manufacturers desperately needed new strategies to keep the punters plunging.

Money was an obvious incentive. Machines started giving cash payouts, token equivalents or free plays if you scored well. They weren't the only gimmicks. By the time the war stopped production in 1942, the latest pinballs featured not only lights but tilt mechanisms, elaborate backglass illustration and bumpers as well.

During the war, when most manufacturers switched their balls for bullets, pin production was confined to a few lacklustre conversion kits. These packages, designed to squeeze extra life out of existing machines, came complete with a new backglass design, new plastic playing field covers and a suitably patriotic title – something short and snappy like Victorious, Invasion or Japs.

But there was still something missing...

THE FLIPPER FACTOR

Until 1947 the most novel post-war pinball innovation was the kickout saucer – a small hole somewhere on the playfield which caught and then

Time, released in 1967 marked another topical theme – it featured a group called the Bootles – and machines like Four Million BC were the beginnings of a movie tie-in trend.

CHIPS WITH EVERYTHING

Enter the microchip... The first digital pinball made its appearance in a 1975 machine confusingly called Spirit of '76. Though the scoring was digital, the playfield lacked sparkle and the punters and the machine didn't hit it off. It wasn't until the release of Dyn-O-Mite the following year that the fate of mechanical pinball was finally sealed. Though some manufacturers started out producing both mechanical and electronic versions of the same game (Freedom, Night Rider), the future was definitely electronic.

The first machine to make full use of microchip technology was Bally's Eight Ball. It used its memory to keep track of which targets the first ball had hit. When the second ball was played, those targets would still be marked – something totally unheard of pre-microchip. The feature was obviously popular: Eight Ball sold a record 20,230 units.

Multi-players became the norm, and the licence trend which had begun to flourish in the late sixties became even more popular in the new electronic age. Star Trek, Superman, Evil Knievel, Dolly Parton, Buck Rogers, Muhammed Ali, Charlie's Angels and Close Encounters all had machines named after them. Outer space outstripped them all. Countdown and Stars pulled some of the most enthusiastic crowds.

In the early eighties video games were a burgeoning arcade market. Right from the start they were competing with pinballs in the popularity stakes – ironically, many pintables actually cashed in on their success. There were pinballs based on Space Invaders, PacMan, Spy Hunter and even Defender.

In the battle of the coin-ops, sophistication was pinball's weapon number one. The massively popular Fireball premiered lane-change (which enables players to shift lit lanes, making it easier to complete sequences). Black Knight had the first double-level playfield and Haunted House had an extravagant three storeys with spooky organ music to boot. Krull added an extra gimmick to the multi-level game: the transparent cover over the bottom playfield actually reduced the image – what you saw were tiny balls and even sillier-looking flippers.

Even so by 1982 it looked like the video games had won the war, and until 1984 there was a definite lull in pintable production. Then, just when it looked like pinball's final hour had come, Williams came up with a massive hit. Space Shuttle didn't need multi-level gimmicks: with its outstanding sound, artwork and exceptionally well-designed playfield layout, it marked the turning of the pinball tide.

Other successful machines followed: Comet, which was based on an amusement park theme, Raven (a kind of female Rambo) and High Speed which was the first pinball to feature automatic replay percentaging. It automatically shifted the score required to win a free game higher or lower, according to how many players had won them already.

With the likes of expensive machines like Monaco Grand Prix and Operation Thunderbolt beckoning to eager coin-slotters, it's unlikely pinballs will ever recover the popularity they once had. But there are still plenty of enthusiasts, and bigger and better machines are being produced all the time. We haven't seen the last of that tantalising silver ball.

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significant developments in the history of pin and ball: the amazing flipper revolution.

Gottlieb unveiled Humpty Dumpty, the first flipper game ever, in the autumn of 1947 and by the end of the year most of the other pinball manufacturers had followed suit. Flipper fever raged. No self-respecting pintable could be expected to rake in the cash without one. As an emergency measure older tables were fitted with flipper-retrofit kits. Without them they were obsolete.

Throughout the late 1940s all sorts of weird and wonderful flipper, bumper, kickout saucer and ball combinations flooded on to the market. And by 1950 they'd reached saturation point. The manufacturers were looking for gimmicks and they found them: gobble holes (mega-scoring holes in the playing field which also munched up your current ball) and elaborate playfield animation. Gottlieb's Knockout actually featured two miniature boxing champs – to celebrate a successful target sequence, the models knocked each other out.

In 1954 Gottlieb released the first ever game to cater for more than one player. Super Jumbo, a four player extravaganza, set out to prove that 'It's More Fun To Compete.' The formula was successful and a variety of two and four player games followed. Among the earliest were Duette and Williams' Race The Clock.

On the playfield, the fifties brought relatively few innovations, so much of the last half of the decade was spent in devising new ways of using old favourites. Nine Sisters had only one flipper accompanied by a tactically positioned kickout Saucer, Gypsy Queen had sixteen rollover lanes, and Balls-A-Poppin' was just that: up to six silver spheres whizzing around the machine at once. Another short-lived fifties innovation was the disappearing bumper (it sank below the level of the playfield and revealed an extra lane) – it turned out to be too expensive to produce.

The swinging sixties brought other preoccupations. Pinballs didn't just have peace protests and flower power to contend with – there were drive-ins and automatic bowling machines as well. Nevertheless, the decade introduced the add-a-ball feature (Flipper), drop targets (Vagabond) and spinners (Swing Along). These last were metal targets at right angles with the playfield, designed to whizz around and score massive amounts of points when hit by the ball. Gobble-holes, which had proved so popular in the fifties, disappeared completely and multi-ball play was revived occasionally in games like Beat The Clock.

Ted Zale, destined to become one of the most well-known of pinball designers, produced his debut machine in 1963. Moon Shot, a sure winner because of its links with the topical space race, had Zale's characteristically asymmetrical playfield design. He wasn't the only innovator. Norman Clark invented the split-form, a rudimentary machine memory capable of keeping track of which targets a player had hit on a two-player machine (Eight Ball), and the captive ball spinner unit – a mini-roulette wheel on which the ball scored extra points (A-Go-Go).

Contemporary preoccupations have always been reflected in pinball themes. As the race to the moon became ever more prominent players flocked to games with Science Fiction titles, like Orbit. Space Mission actually pictured the US-Soviet space link-up of 1975 and featured artwork based on original NASA photographs. Beat

PARTS

THE FLIPPER

By modern standards, the earliest flippers were short (only two inches long), weak and back-to-front. The relatively poor electrical current standard in the 1940s couldn't manage too hefty a kick (full–size machines often needed six sets of flippers to get a ball up the field) and the earliest flippers faced the outside rather than the inside of the machine.

Many modifications followed. By the early fifties two flippers at the base of the playfield had become more or less standard. With the sixties came the kickup shooter (it shot up between the flippers and jettisoned the ball back into play), the up-post (a between flipper pop-up designed to stop the silver sphere rolling away) and the flipper zipper – the flippers moved together and closed the flipper gap.

The biggest leap forward in flipper design was premiered in Hayburners. Instead of the usual two they were three inches long. Slowly, three inches became standard size for the base of the game, the two-inch version often being relegated halfway up the playfield to the formation we're used to today. There have been exceptions though: Chicago Coin's Big Flipper released in a heady 1970 sported a massive pair – five inches long.

THE BACKGLASS

As soon as pins moved off countertops, the backbox was the place to try out flashy gimmicks including all sorts of animation. As the advert says, Taps featured an animated minstrel as early as the mid 1930s. Other exceptional backglass gimmicks featured a 3D fisherman who'd reel in a massive catch – and in Race Way, two cars moved around a racetrack whenever the appropriate targets were hit.

AND THE SCORE IS...

The first automatic scoring systems still required a bit of mental arithmetic. A series of numbers increasing in hundreds and thousands were displayed on the glass itself and lit up in the correct combinations to display the current score. It was a system that worked best for a solo player, as keeping score for two or more people would have got far too complicated.

By the mid-fifties most traditional scorers were being replaced by automatic score reels. Basically these were numbered rotating drums which kept score pretty much like a car's speedometer. The new scoring system paved the way for multi-player games but it had its own disadvantages – if the ball hit two targets in quick succession, the second score wouldn't register because the score reels could only turn so fast.

In the 1960s machines started challenging players by displaying scores to beat but the real revolution came with digital scoring in the 1970s. Electronic pinballs were capable of adding up scores instantly (long before pocket calculators became available) and registered every target hit, no matter how quick the succession. Most modern pinballs display scores almost automatically yet still incorporate lots of scoring blips and ringing bells to create a sense of massive achievement.

Chicago Cubs Triple Play was the first pinball to feature alphanumeric scoring. The digital readouts spelt out words and messages as well: top scorers could even imprint their initials for everyone to see.

THE INCREDIBLE EXPANDING SPHERE

You can tell a pintable from the size of its balls. Early countertops and battery-powered machines were more suited to balls around the size of a marble, sometimes as small as a ball-bearing. Electrical pinballs on the other hand had much more power than their solenoid predecessors and could cope with the larger modern-sized balls. They'd become the standard by the late 1930s.

NUDGE NUDGE

Until 1934 it was common practice for dastardly cheats to pick up countertop machines and shake them if they didn't think they were successful enough. Arcade owners devised ingenious ways to stop the counterfeiters: weighting the pingames down with sandbags or hammering long nails into the base to give any double-crossers a painful surprise.

Bally's Signal was the first game to incorporate an anti-cheating mechanism. If the machine was shaken too much, a small steel ball would fall off its pedestal on to a metal ring, complete an electrical circuit and end the game. Its title was a wordy Stool Pigeon – players christened it the snappier 'tilt'.

Modern tilt mechanisms haven't changed since Harry Williams first devised the pendulum tilt. A cone-shaped plumb bob hangs from the centre of a metal ring: if excessive jolting causes them to make contact, the flippers lock up and you lose your turn.

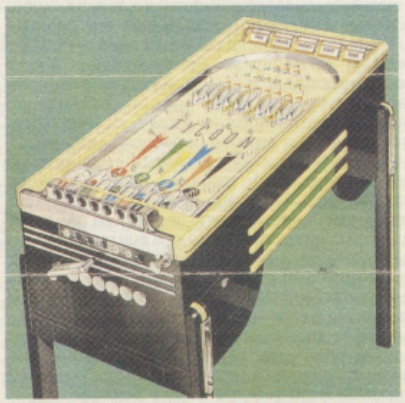
THE BUMPER

Until 1936 the only way to get a high score was to drop your ball into the highscore pockets. Bally's Bumper made its debut in 1936 and changed all that: it featured metal posts surrounded by coiled springs. It wasn't long before all of the manufacturers were using bumpers in wild and wacky combinations, sometimes in tandem with sequences of flashing lights as in Daval's High-Lite. These early bumpers didn't have the kind of kickback action they produce today. Their only function was to act as tactical targets and to score points.

The mushroom bumper, a Ted Zale trademark, was first used on Bally's Monte Carlo in 1964 – and it wasn't long before practically everybody followed suit. Wayne Neyens devised random pop bumpers and tried all sorts of ways of altering bumper gameplay: Goucho had nine bumpers surrounding a rotating wheel designed to keep no more than two targets available to the flippers at any time.

THE WAGES OF SIN

Throughout its history, American pinball has come up against the stigma of gambling. In the late 1930s, in a desperate attempt to boost waning popularity, machines like Mills' Tycoon started offering cash-payouts, or tokens if you managed to predict the pocket your ball was going to hit. However, they occasionally fell foul of US gambling laws. Where the law was particularly puritannical, they offered replays instead – though some states considered a replay as 'a thing of value' and banned these machines as well.

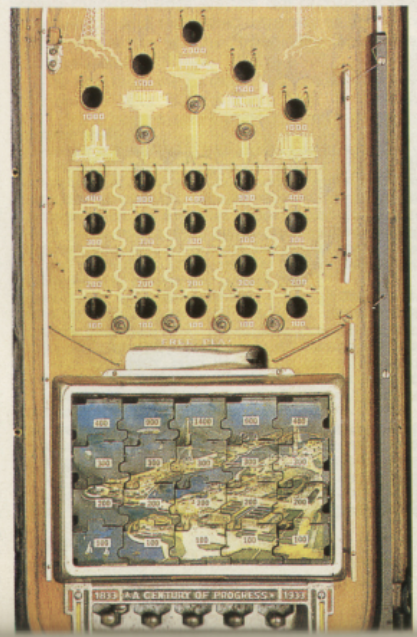


▲Bingo pinballs like Gottlieb's Bank-A-Ball appeared briefly in 1951. They looked like ordinary flipper pinballs, but actually played a lot more like Bagatelle. The only independently controllable feature was the plunger – the objective was to light up winning bingo cards. Bingo machines never awarded cash, only replays, but they were still considered gambling devices because they could register far more replays than anyone could possibly play in one go. Often machine owners just paid off the winners instead. Even today bingo pinballs can only be used legally in three American states.

Pinball didn't really manage to rid itself of its bad reputation until as late as the early sixties and the advent of the concept of add-a-ball. Flipper was the first machine to offer free balls (extended play) instead of free games and free balls can't be exchanged for cash. In some parts of America these are the only kind of pinballs allowed.

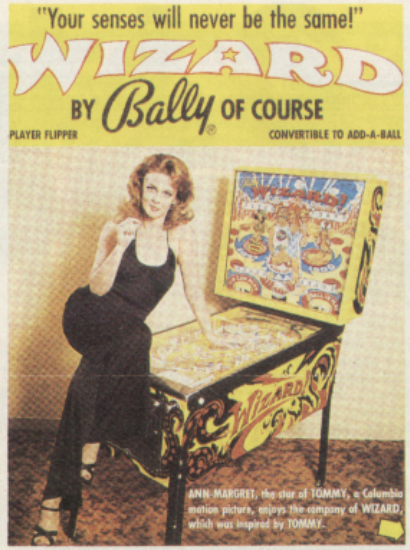
▲If there was life before pinball, it was called Bagatelle. Marbles were shot into the numbered pockets and at the end of this exciting and adventurous exploit all the scores were added up.

▼Competition between early pinball manufacturers encouraged experimentation. World's Fair, produced to commemorate the 1933 Chicago event, featured a jigsaw in the centre of the playing field. Each time a ball dropped into a hole, it revealed a corresponding piece of puzzle.



▼Atari dipped briefly into the pinball market between 1977 and 1979. Their trademark was a wider, fatter table design which received a mixed reception from the regulars. Their range of titles included Airborne Avenger and Space Riders, but their first machine (The Atarians) was by far the most popular. Superman was the last wide-body Atari machine to be released.

▲The world's first talking pingame was unveiled in 1979. Gorgar accosted potential players with the dubious words: 'Me Gorgar, beat me and you hurt Gorgar'. It sounded a bit like a record being played at half-speed, not because the technology couldn't cope, but because of how manufacturers thought players would expect a machine to talk. The monumental message was usually recorded at normal speed and then played back 30% slower to create a more mechanical sounding voice.



▲In 1975 pinball became the subject of a movie in its own right: Tommy. The film was incredibly popular, Pinball Wizard raced up the charts and the machine manufacturers weren't slow to catch on. Two separate pintables were inspired by the film: Wizard and Captain Fantastic. Wizard featured Tommy himself, Captain Fantastic concentrated on Elton John.

▼In the desperate battle against the video games some manufacturers resorted to combining mini-versions of the two. Like Baby PacMan, Granny And The Gators incorporated a scaled down version of pinball into the upright cabinet of the video game.

instead of free games and free balls can't be exchanged for cash. In some parts of America these are the only kind of pinballs allowed.

COMPUTER PINBALL

Pinball conversion don't have mass appeal. Most pinball enthusiasts consider them a weak video substitute – however much they manage to capture the look of a game, they can't quite recreate the feel of the real thing – at least, not yet...

TIME SCANNER

Capturing the thrills and spills of the pinball world hasn't proved to be all that successful on 16-bit. Probably the most famous of the bunch is Activision's Time Scanner, which is actually a conversion of a conversion as the original coin-op was itself a video game. In addition to the usual array of bumpers and target, Time Scanner features warp gates which transport you to a totally different playfield. Unfortunately the 16-bit versions, unlike the coin-op, lack one essential ingredient – realistic ball movement.

PINBALL WIZARD

Anco's Pinball Wizard is one of the more successful attempts at producing computer-generated pinball. The table's simplicity belies its exceptional playability, which is complemented by a host of suitable jingles, speech and other swish sounds (including a deep laugh when you lose a ball). Sadly, it's no longer readily available, having been discontinued from Anco's back-catalogue.

BUILD YOUR OWN

Pintable designers include Infogrames' Macadam Bumper and The Pinball Factory from Microdeal. But it's Electronic Arts who did it first – well, Bill Budge to be precise. His Pinball Construction Kit was one of Electronic Arts' first releases, and it's still the company's biggest seller to date. Unfortunately, there are no ST and Amiga versions, and it's almost impossible to acquire it on the PC. Macadam Bumper is definitely the more playable of the other two construction sets, and features such essential items as bumpers, flippers and targets realistically. The Pinball Factory isn't quite as slick a program (it only has one pair of flippers) but features drop targets and multi-ball play.

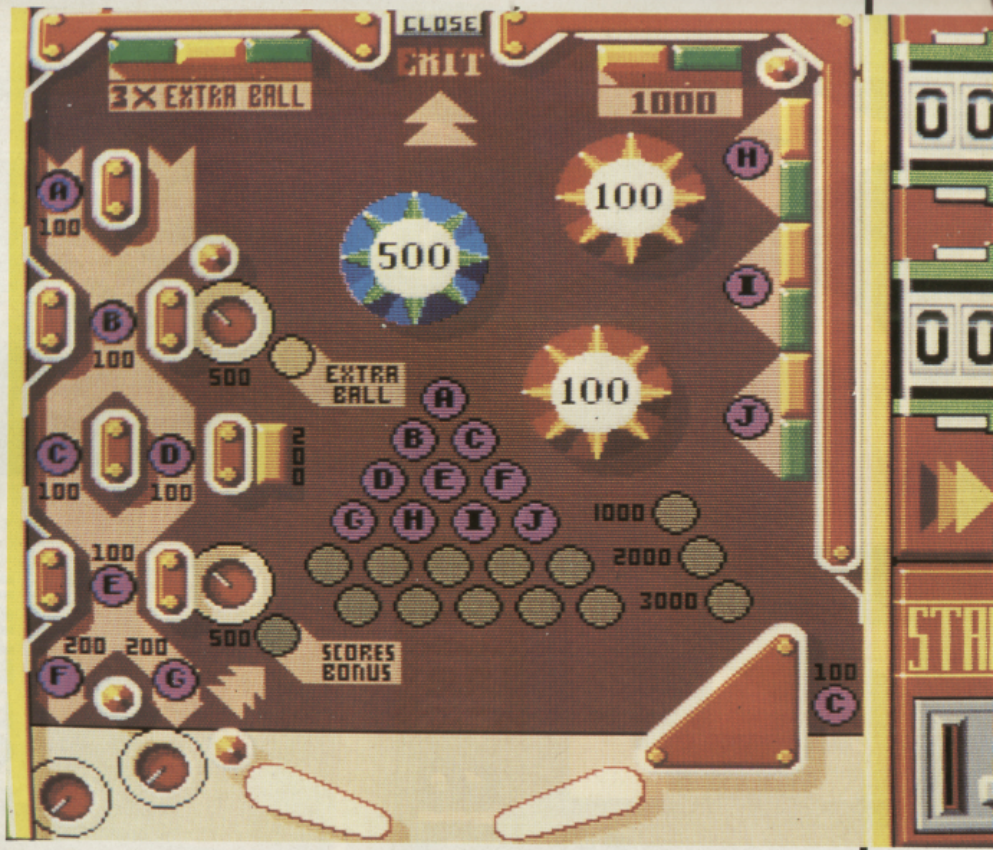
PINBALL MAGIC

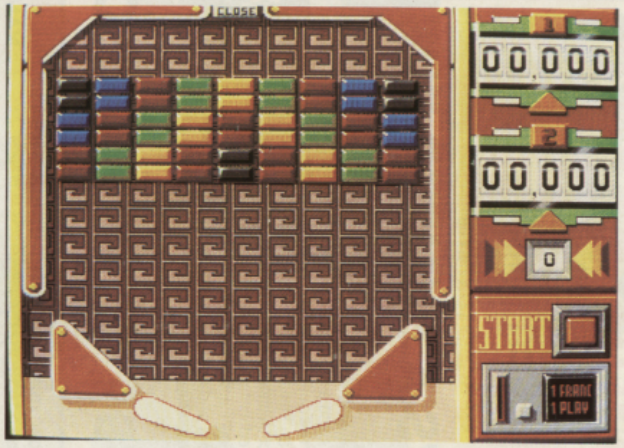
French software publisher Loriciels is the latest company to produce a computer pintable – 12 of them in fact! Pinball Magic comprises 12 'levels', each a playable pintable in its own right. The idea is to play ball and open the exit at the top of each table by switching off lights corresponding to letters of the alphabet. You then progress to the next, more demanding table.

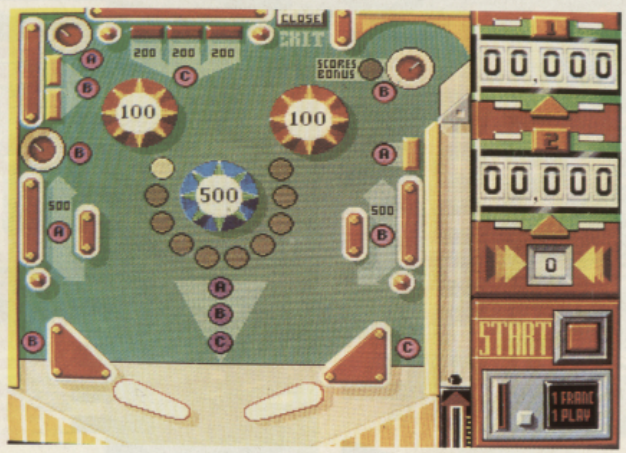
Each table has the traditional array of flippers and bumpers, but some also contain special bonus features – like bricks to knock out and fruit machine reels to spin.

The ball movement is realistic and, more importantly, it feels good. The only major criticism is one that is typical of every computer pintable: the tables aren't as long as their real counterparts, and so the 'illusion' is lost – along with the ball a little too often!

Pinball Magic is available for ST and Amiga for £24.95 apiece, with a PC-compatible version to follow later this year.







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1) How many pintables does Loriciel's Pinball Magic feature?

A 1
B 6
C 12

2) When did flippers first make an appearance on pintables?

A 1901
B 1947
C 1970

3) Which outrageous rock group endorsed a pintable in the 70s?

A Bros
B Abba
C Kiss

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I OWN (TICK ONE)

ST ☐
AMIGA ☐
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THE SMALL PRINT

The editor's decision is final and no correspondence will be entered into. Employees of US Gold, EMAP and Loriciels and their relatives are not allowed to enter, so don't...

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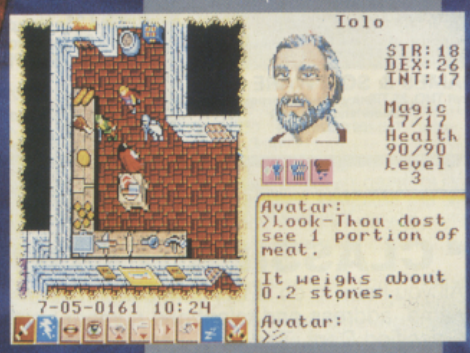

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The video game celebrates its 18th birthday this year, and Atari Games, the company that started it all with Pong, is still going strong. His pockets bulging with quarters, Gary Whitta takes a look inside the video game industry's greatest innovator.

INSIDE ATARI GAMES

It's said that the Japanese take everyone else's ideas and do them smaller, better and cheaper. But when it comes to arcade games, it's everyone else who follows in their footsteps. These days you can't go into an arcade without overdosing on games from the land of the rising coinslot, with giants like Sega, Taito, CapCom, SNK, and Konami all household names to the arcade aficionado.

But while the Japanese seemingly continue their domination of the coin-op industry, and (almost) all others are crushed in their attempts to stop them in their tracks, there is one American company that not only manages to hold its own against the great Oriental steamroller, but also carries on as one of the arcade industry's great innovators.

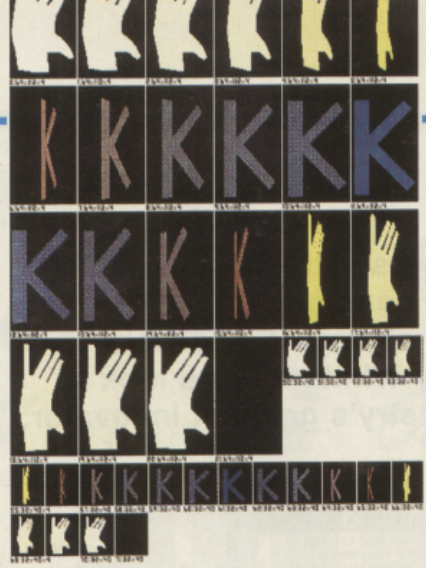
That company is Atari Games.

While the name Atari might suggest a company of Japanese origins, it prefers hot dogs and Mom's apple pie to sushi and Mama-Sans' lychees any day of the week. Founded by electronics wizard and visionary Nolan Bushnell in the early 70s, Atari

Mount Fuji, the inspiration for Atari's logo.

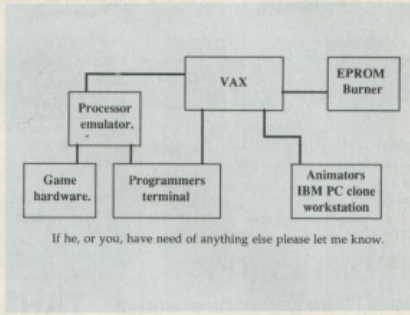
Mark and Dave greet you Klax-style outside Atari Games' Employees entrance. Note the shrubbery!

Atari pioneered the second-person perspective race game with Pole Position (above) and was first to develop the theme further with RoadBlasters (below).



A spinning letter K adorns the opening sequence of Klax, before it turns into the Klax hand symbol – and then reverts back to its original state again. Apparently, the hand symbol (which was devised by Mark) is something that's actually catching on. "You've got to have hooks, Something for the public to grab onto," he explains. "And it works. In the arcades over here the kids are actually doing the movement!"

Mark Pierce's computer-produced schematic diagram is perhaps the easiest way to understand Atari's technical process. Each member of the team works at their own terminals (with the programmer using a Processor Emulator to see how the game currently looks) before downloading everything into the VAX, which then compiles and compresses everything before feeding it to the EPROM Burner. Simple eh?



takes its name from the classic Japanese board game **Go**. Anyone who's played the game will know that an Atari is the Go equivalent of check in Chess. The well-known logo is a representation on Japan's famous volcano Mount Fuji – Bushnell chose it because he was a great fan of the Japanese genericism, and wanted to give his firm an Oriental flavour.

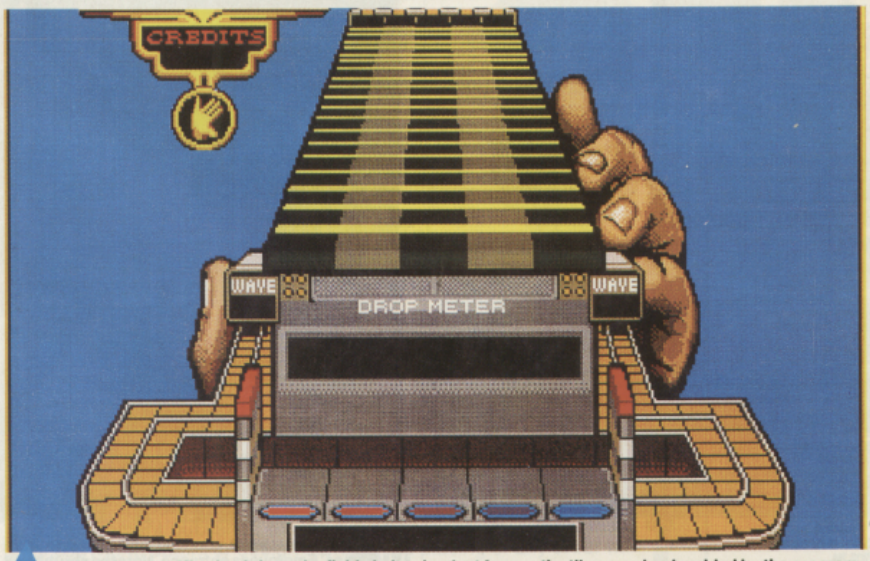
Atari erupted in 1972 with the bat 'n' ball classic **Pong**. What is generally accepted as the world's first video game was designed by Bushnell himself, and was a runaway success – for the simple reason that nobody had ever seen anything quite like it before. Since then, Atari's enjoyed massive success with games like **Breakout** (1976), **Asteroids** (1979), **Missile Command** (1980), **Centipede** (1981), **Pole Position** (1982), **Star Wars** (1983), **Marble Madness** (1984), **PaperBoy** and **Gauntlet** (both 1985), **Super Sprint** (1986), and **Hard Drivin'** (1989) – all of which served to ensure that Bushnell's baby was no one-game wonder. But even so, the company served up its fair share of obscurities in its time – ever heard of **Cloak & Dagger**, **Arabian**, **Canyon Bomber** or **Smokey Joe**? No? We thought not.

Before long Atari moved out of the arcades and into the homes with the launch of the VCS 2600 console and, later, its first home computers in the form of the 400/800 range. Since then Atari's been responsible for the forgettable XE/XL machines and of course the more memorable ST range.

Unfortunately, these days Atari isn't the one big happy family you might think – in fact it's practically divorced from itself. Bushnell sold Atari to movie giant Warner Communications in the late 70s, and it wasn't until the early 80s that ex-Commodore boss Jack Tramiel arrived on the scene to buy it back – but only half of it. The story goes that Tramiel was only interested in the home computing side of Atari, as he was hoping to buy the Amiga from its developers and release it as an Atari machine. For this reason, he only bought the computing arm of the company (known as Atari Corporation), leaving Atari Games as a separate company.

Today, Atari Games and Atari Corporation rarely interact – they are even based in completely different offices, and in a sense they are actually in competition. When Atari Games decided to move into the expanding home market by producing software, Atari Corporation stepped in to tell its 'sister' that it wasn't allowed to use the name Atari in the home computer market. For this reason, Atari Games came up with its own publishing label: Tengen, which again comes from the board game Go. The Tengen is the name given to the centre of the board. And as Domark's General Manager John Kavanagh explains, that's why you won't find the Atari Games name or logo on any of Domark's long line of Atari coin-op conversions – Tramiel bought the rights to use the Atari name on consumer products as part of the terms of the sale – Atari Games, therefore, has to market its software under a different name.

That, however, hasn't put Atari Games off in the least. With over 140 (count 'em) coin-ops under its belt, a string of its own arcades in the USA and over



One of Mark's many Klax backdrop playfields in its simplest form – the tiles are simply added by the program.

Klax programmer Dave Akers (who used to work for Mattel Electronics, the manufacturers of the now defunct Intellivision game console) and Mark Pierce with their development system hardware. No fancy cabinets here – it's just a prototype circuit board hooked up to a monitor!

Brad Fuller, head of Audio at Atari 'gets on down' in his office, with the help of some of his funk-making technology.

The whole of the Klax team assembles for a rare group shot. From left-to-right: John Salnitz (operating system software), Pat McCarthy (hardware design head), Dave Akers (programmer), Mark Pierce, (designer, graphic artist and project leader), Farrokh Khodadadi (technician), and last but not least, audio man Brad Fuller (front).

More and more coin-ops are carrying an anti-drugs message in their opening sequences – and Klax is no exception, as you can see here. "We have an agreement with the government to display the message on the front end of our games," Mark reveals. "We oblige, and they give us a bit of publicity in return."

400 people employed worldwide, Atari is one of the most prolific games manufacturers in the world today – and one of the wealthiest, with the company expecting to rake in over 100 million dollars this year alone!

It's at Atari Games' headquarters in Milpitas, California, that the games are conceived, developed and produced. You name it – Star Wars, Paperboy, Gauntlet, Super Sprint, Hard Drivin'... they are all the work of the development personnel based there.

One member of that team is the man behind some of the company's biggest successes over the last few years – 31-year old Mark Stephen Pierce, one of Atari's principal games designers, who comes from a rather unlikely background: he was an artist long before he ever went near a computer.

Mark's career as a binary Boticelli began while studying at the School Of Arts Institute in Chicago. It was here than the two vocations he currently excels in came together... "In my final year the school got a ZGrass computer which I started playing around with, drawing and animating with it. I did some animations of talking faces, which were seen by the guy who invented the machine. He asked me to come and work for him, so I did, writing animation demos for trade shows, like the Consumer Electronics Show. I was just making characters run around on screen to show off the capabilities of the Astrocade machines."

"I also co–wrote a game in 1982 called **Professor PacMan**, which was basically a multiple choice questions and answers game with animated sequences. The Astrocade was very similar to the hardware inside the Bally coin-ops of the time. Professor PacMan sold about a thousand copies, and after that, in 1984, I started a company called Macromind, writing productivity tools – basically music and art utilities – for a while, and then I sold out my share in the company, and then wrote the platform game **Dark Castle** for the Macintosh ."

The move to Atari Games came about in 1986 when Mark moved to California: "I knew that there are more computers per square mile there than anywhere else in the country." California is the home-base of just about every major developer and publishing company in the States, including Cinemaware, Lucasfilm, Epyx, Spectrum HoloByte, Electronic Arts, Activision, hardware manufacturer Apple – and of course Atari.

Atari has earned itself a reputation for originality since its inception, with innovative wares such as **Lunar Lander**, **I, Robot**, **Marble Madness, Gauntlet**, and **Cyberball** all breaking new ground and inspiring many – including Mark: "I joined Atari because I wanted to produce something different – something more challenging. There are so many shooting and fighting games in the arcades, and that just wasn't the thing I wanted to get into."

Mark's first project for Atari was the ageing race-and-destroy classic **RoadBlasters**, for which he produced the graphics and co-designed with programmers Bonnie Smithson and Richard Moore over the course of a year. "I still play Roadblasters," Mark confesses. "I think it's a great game because it's so simple. I really like the combination of driving

A SOUND HEAD

Sound is something that's rarely noticed in today's arcades – with the combined din of all the machines going at once it's difficult to make out anything at all. But even so, Atari takes its sound every bit as seriously as its graphics and game designs – and no-one takes it more seriously than Brad Fuller, Atari's head of audio development and his three-man team. After studying at the Indiana School of Music, Brad went on to write advertising jingles before joining Atari – he's been there for eight years, and has produced the sonics for (among many others), Marble Madness, RoadBlasters, Cyberball, **Firefox** (based on the Clint Eastwood film), **Blasteroids**, Escape From The Planet Of The Robot Monsters and now Klax.

Brad's team comprises three composers (including himself), who design and create all the music and sound effects, plus a Design Engineer, whose job it is to ensure that everything is going to plan and works from a technical point of view.

As Brad explains, in the world of coin–op development, sound is anything but an afterthought: "We work very closely with the Project Leader and his team, and make sure to keep up to date with the game – we have to make constant checks, as we never design a particular effect until we see the visual that it has to come from."

With developments in sound technology constantly on the move, Brad's always got something new to work with – but at the end of the day he's limited by the technical constraints of the machine itself: "Currently we use PCs, with some Yamaha synths for the keyboard effects. But when we're actually designing and composing a tune for the first time, we use the old methods. We write it out on score paper and play it on piano before taking it to the computer."

Effects-wise, Brad's team has a large ready-made sound library stored on CD, where the majority of the SFX come from: "We have plenty of gunshots and explosions, and we play around with these to get the desired effect." But it's not always that simple, as Brad often has to get his effects from other – sometimes unlikely – sources: "The klick-klack sound of the tiles in Klax was created by playing around with the sounds of people's voices, and also from musical wood blocks. The scream that occurs when a tile falls into the abyss is actually Mark Pierce's."

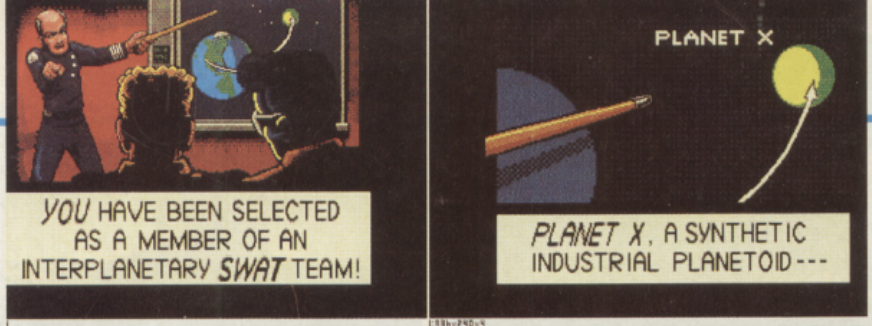
"It's tricky – at first you may have a sound that won't fit, but you can play with it and after a while it works. You can't just look at your sound library and say 'which of these effects sounds like a tile' – and anyway, what does a tile sound like?"

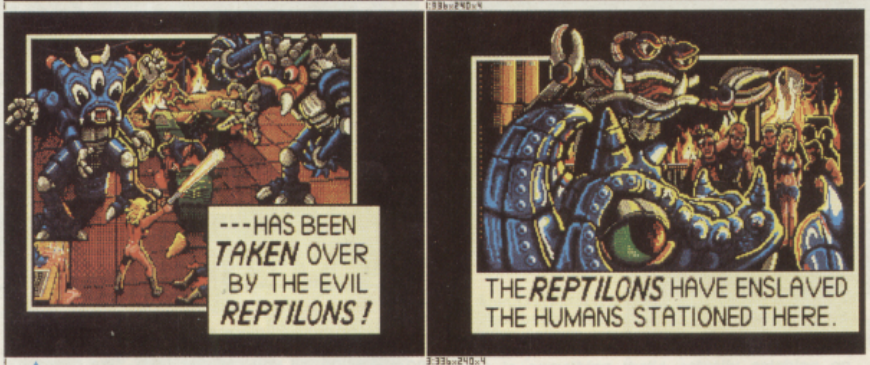
For the purposes of speech, no expense is spared, with Atari hiring professional 'talents' to come in and recite a script that has been produced in the style that the team requires. Once it's recorded, it's played around with like any other effect until it's perfect.

Brad's views an arcade game's sound as one of its most important aspects – he claims it's as least as important as the sound in a film. And he's proud of what he produces: "I don't want to sound pompous, but I think Atari produces the best coin-op sound. The sound produced by other manufacturers is like pop music, but with us we're creating something more atmospheric. My goal is to produce sound that heightens the overall experience, and to increase the enjoyment value of a game."

Surprisingly, Brad is also quite concerned about coin-op sound – or at least the amount of it: "In the arcades over here, the owners like to turn all the volumes up real loud, to get people interested, but with all the machines going it gets just too loud. I recently measured the level of sound in a few arcades, and it was actually reaching levels that can be harmful to the ear. With Firefox, we included a jack socket that people could plug their headphones into, but that's actually worse, as the kids just turn the volume right up."

As for the future of sound, Brad foresees what he calls 3D sound making an appearance. "Sound effects will be positioned, so that when something happens on-screen, you'll be able to localise the sound effect to that point – it's all done with the positioning of the speakers," he muses. "I think that as technology increases we'll be hearing sound that sounds more like real instruments. The whole experience will be much more film-like."





Mark designed and drew the opening sequence for Escape in the style of the OTT comic books that he avidly collects. Its tongue-in-cheek style is typical of the rest of the game, with big-chested guys'n'gals battling it out with the army of mutant cyborgs!

Just one of Mark's many in-game cartoon sequences that give Escape its cartoon-like flavour.

and shooting. Ever since we did Roadblasters I've been really into race games, but only in the arcades. I think racing games at home lose the feel because of the lack of a steering wheel."

After RoadBlasters, Mark set about with Roadblasters programmer Bonnie Smithson producing his biggest and most time-consuming project to date – **Escape From The Planet Of The Robot Monsters** (which, for the record, boasts the longest game title in coin-op history). From conception to completion, Mark and his team spent over two years on Escape. But the inspiration for such an escapist concept has been around for even longer – since Mark's childhood in fact.

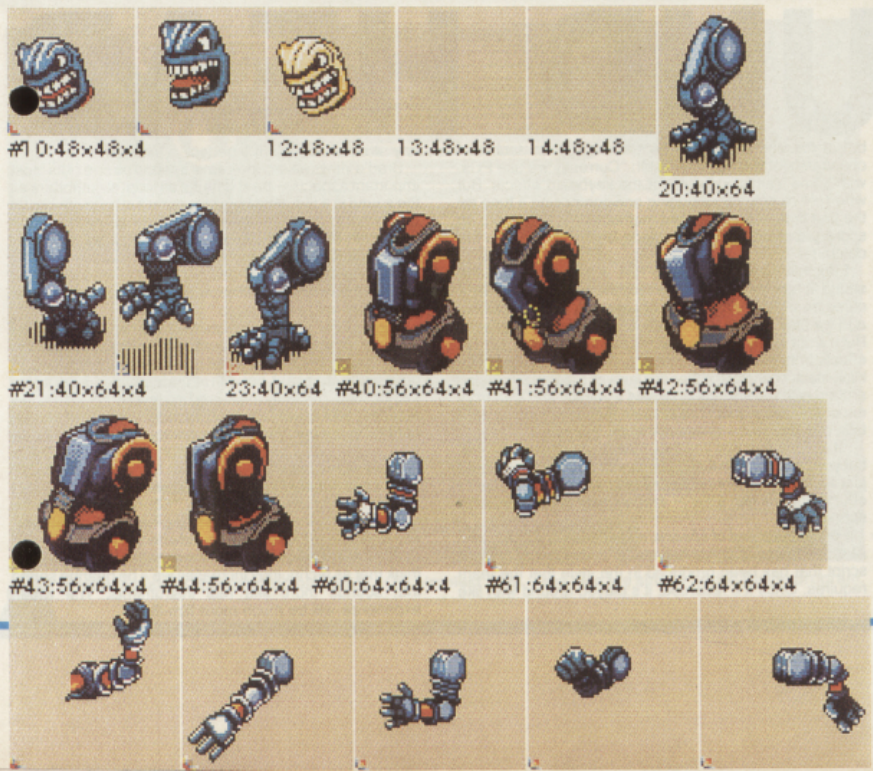
"My Dad sells comic books for a living, and has done since I was a boy, so I grew up with them. I've always been fascinated by them, and in particular the concept of an interactive comic book – something where you could actually influence the story rather than just following along with it. That's what I was trying to do with Escape – it's not perfect, but I think it's getting close to the ideal. As for the scenario, I was influenced mainly by the 60s Science Fiction B-movies like Plan 9 From Outer Space, The Day The Earth Stood Still and all those other really terrible movies."

While Escape doesn't offer anything radically different in the gameplay stakes – it's just a matter of shooting the robots and rescuing the prisoners – Mark believes the presentation sets it apart: "The isometric viewpoint is perfect – it works so well because by looking down into a room from the corner you can see just about everything there is to see. It worked in **Zaxxon**, **720°** and **Populous** and I think it works here too. It was easier for us to do as well – we just took the old Isometric Playfield Generator that was written for and used in Marble Madness and put it to work here – the basic routines that run Escape and Marble Madness are one and the same."

After working on Escape for over two years (which Mark puts down to the sheer size of the game), he's now a little tired of the project and was glad to see it completed. Even so, he still feels there's room for improvement: "Looking back on Escape, I'm pleased with it. But if I was starting again on it now, I'd like to do things a bit differently. For a start I'd want more flare and more action to make the whole thing more hectic. At the moment it's not as pacey as I'd have liked. And I would have liked to have given the player more control over Jake and Duke by giving them more combat-like moves, rather than just shooting away. I like the games where you've got a whole array of fighting moves, and that would have worked and added atmosphere to Escape." The chance of a second attempt seems unlikely: "It took over two years to put together – there's no way I want to go through all that again just to produce one game. All I wanted to do next was produce something playable, compact and relatively quick to develop."

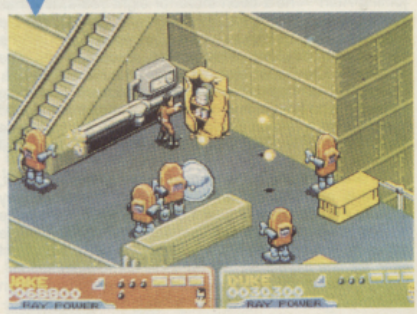
So he did. The result was the comparatively serene **Klax**, aimed at the same market as the classic mental agility test **Tetris**.

"Our Marketing people saw that Tetris had created a niche in the market, and I could see the



Escape's end of level Bosses are built from independent components – the arms, legs, head and body are drawn separately, as shown, and then put together to create a finished monster. "It's really a graphical constraint of the hardware we have," Mark explains. "We can't draw a sprite bigger than 64 pixels square, so I have to draw them this way. It's actually harder to do this way, but it is useful as it means we can swap around pieces of monsters to make completely new ones! It's also quite convenient for me, as one of the programs I did when I was doing demos for the CES show was a monster-maker kit, where you had a set of pieces you used to make monsters."

And this is how it looks with all the elements in place – comic-book capers Atari-style.



Escape from the Planet of the Robot Monsters Page 11

usual the player will have to evacuate the bomb site or suffer the 75 point health penalty. There will then be an expensive, spectacular death explosions and the Reptilon will be defeated allowing the player to pass to the next factory wave.

Escape from the Planet of the Robot Monsters Page 15

Arms Lockers:

Will contain various weapons and must be opened with a Arm Locker key. Attemping to blast the locker open with plastic explosives or grenades will cause the Locker to blow up destroying all the weapons within and creating a dangerous concussion area of 150 pixels.

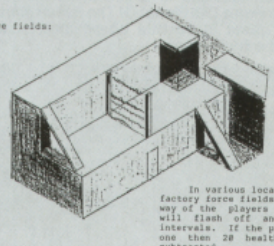
Warp doors:

These are a possibility to be considered later in the development cycle which will alow a player to jump levels.

Conveyor belts:

These will allow the player to get to places that they could otherwise not reach. The belt will cause the player to use timing and judgement when jumping on and off the belt. There will be a hazard at the end of the each belt that the player must avoid being pulled into.

Force fields:



In various locations around the factory force fields will stand in the way of the players progress. These will flash off and on at various intervals. If the player is caught in one then 20 health points will be subtracted.

Trap doors:

Escape from the Planet of the Robot Monsters Page 17

WAVES

There will be 64 of the following wave cycles.

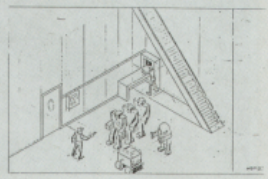
1. Factory Wave.
2. Hovercraft wave (Flatzone type 1).
3. Factory Wave.
4. Reptilon Leader wave (Flatzone type 2).

Back to new factory to start new cycle.....

FACTORY WAVES

Each factory will be made up of 8 tiers or floors. About a level and a quarter will be visible on the screen at a time. Each tier will be on the average 4, 288 X 240 pixel screens wide. The backgrounds will show the factories interior which will consist of metal walls and floors with doors, gadgets and lots of dials. Each tier will have a multitude of robots to fight, slaves to save, doors to enter or avoid, and an escalator to take them to the next teir.

Generally escalators will be on the far side of the tier from where the players entered causing the player to have to fight his way across the floor. Escalators will operate only in the up direction thereby constraining the players movement to an upwardly mobile direction. Conveyor belts, force fields, trap doors, ladders and other hazards as well as attributes will also appear in different locations around the factories. Players can push objects off the cliff-like edge of the tier as well as fall off themselves. Players will work and fight their way up through the tiers of the factory to the top tier where they will be at the beginning of a Flat Zone.



Before a game goes into development, the Project Leader must convince the Atari board that it's worth expending valuable time, money and effort on. An extensive 'Initiation Packet' is used to convey this, and includes game designs, features and sketches so everyone has a detailed idea of how the game will look and even feel before it's started. These three pages from Mark's Initiation Packet for Escape were produced in 1987 and show his original outline (which goes right down to the way in which the alien waves work and the pixel size of the play area) as well as his rough pencil sketches of how the game should look.

same thing by watching people play it in the arcades. What I noticed most was that it was attracting older players – probably because it's more of a thinking game. And I could see that people were getting satisfaction out of playing it. Tetris has a strange appeal – it's simple, and the gameplay is well balanced between the tension of building something up and the relief of removing lines."

With the seed implanted, Mark set about producing ideas for gameplay – by which time clones were already appearing. They were mostly just the same game presented differently, and any twists in the gameplay failed to generate the same kind of tension as the original – let alone improve on it: "With Klax I wanted to produce something along the same lines, and so create a similar sort of appeal, while giving it a gameplay style all of its own."

No easy task.

"I knew that to create a game similar in style to Tetris, the rules had to be simple, but I wanted to do something with a little extra to it as well." That little extra manifests itself in the shape of gravity.

With Tetris, blocks fall when lines disappear, but only by a single line – there's no real gravity, and so it's impossible to set up 'chain reactions'. With Klax however, Mark did Newton proud by incorporating a true sense of gravity. The tiles are supposed to be stacked as they would for real, so when you take some away, the tiles above fall down until they land on another. This allows the player to create a Klax that in turn creates another by the very act of the relevant blocks disappearing and causing others to fall.

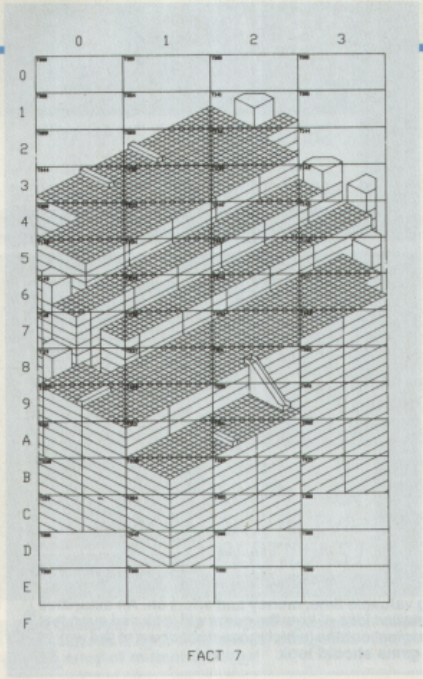
The idea of making lines of three or more came from Tic-Tac-Toe – which is why Atari is calling Klax the 'Tic-Tac-Tile' game. "I think it's got enough original elements of its own to not be called just another Tetris clone. One thing I really like about Klax is that it's a video game only – there's no way it could be done in any other format."

It probably won't come as any great surprise to learn that even though Mark is pleased with the way Klax has turned out, he still feels that there's room for improvement. "When we came to giving Klax a name, I wanted to call it something that reflected its simplicity – something short, and in complete contrast to Escape. So I sat down with Dave Akers and said: 'Okay, we've got five minutes to come up with a title.' Dave just came out with Klax, and we liked it because it was short and it also sounded like the klack-klack sound of the tiles as they roll down the screen. Looking back, I think that's an idea that could have been taken further."

From the amount of knowledge we have of how arcade machines are developed, we might as well just assume that Mr Atari comes along, sprinkles his magic pixie dust on an empty cabinet and presto! A new game. No such luck – putting together a coin-op is much the same as putting together a home computer game... but on a grander scale, as Mark reveals: "When we're thinking about designing a new game, we have to listen to our Marketing people, who inform us of what's popular

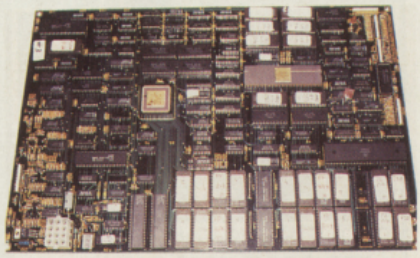
As you can see, sometimes the workload can just be too much – and when the going gets tough, the tough 'relax'. Dave takes a well-earned kip while Mark swots up on the 16-bit scene – and where better to do that than in the magazine they call... The One.

Over two years of intense labour later . . . an Escape From The Planet Of The Robot Monsters arcade machine.

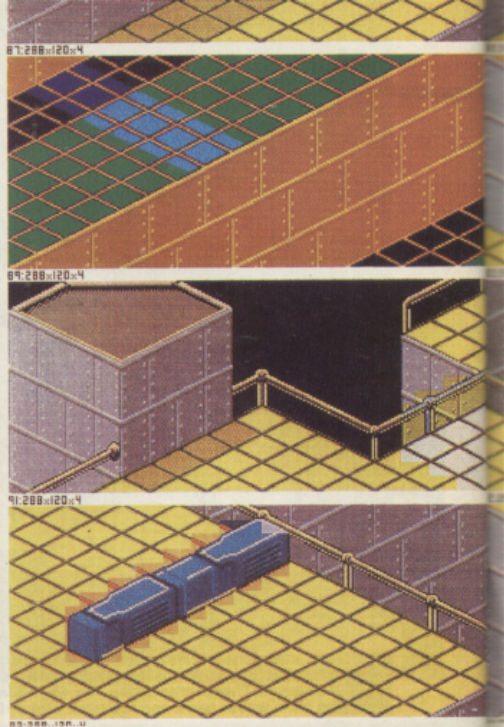


FACT 7

So you want to know what's inside those massive arcade cabinets... well, not a lot on the face of it. Here for example is a prototype game board for Escape From The Planet Of The Robot Monsters – the whole game is on this board that measures only around a foot square!



When creating Escape's robot factories, Mark made use of the Computer Aided Design package AutoCAD: "This is the only way we can see the whole of a level at one time. The coin-op has a test mode, but it doesn't allow us to see a complete level, because they're so big. Four of those small rectangles on the map roughly equals one screen."



and what's likely to make money in the arcades, which is what happened with Klax."

But that's not to say that Mark and his team don't have freedom when deciding what to do, and if they want to create something totally off the wall they can – look at Escape From The Planet Of The Robot Monsters.

With a game concept 'invented' a Project Leader has to assemble an interested party of half a dozen or so people, comprising a programmer, graphic artist, animator, musician, and hardware engineer. The PL gives them all an idea of what has got to be done.

"The first thing that's done is that the project is sketched out in rough – game type, objectives and so on, and a schedule is made up for the team to work to, as it's vital they have the game finished by a certain time."

This might sound like the Project Leader has an easy time of it, but Mark is quick to prove otherwise: "A Project Leader oversees all the work on the game, but he often also contributes to it in his own way. I was Project Leader on Escape and Klax, but I also designed both games and did the graphics. And believe me, you have to take care of everything from making sure the work goes according to schedule to checking that the heating duct above the programmers is running at the correct temperature!"

Now that the idea has become a real game design, the team can start work actually writing it. Even during the technical stages there's not a great deal to differentiate between coin-op and home computer game development...

"All Atari coin-ops today are written in C – that's the most popular language with the programmers here, I guess. The actual programming work is carried out on standard terminals, and then transferred into our VAX machines where it's compiled and compressed. Finally it's downloaded from there through an EPROM burner and onto the hardware for the game that the engineer has put together. Every coin-op's hardware is different – partly because each game is different, and partly as a form of copy protection."

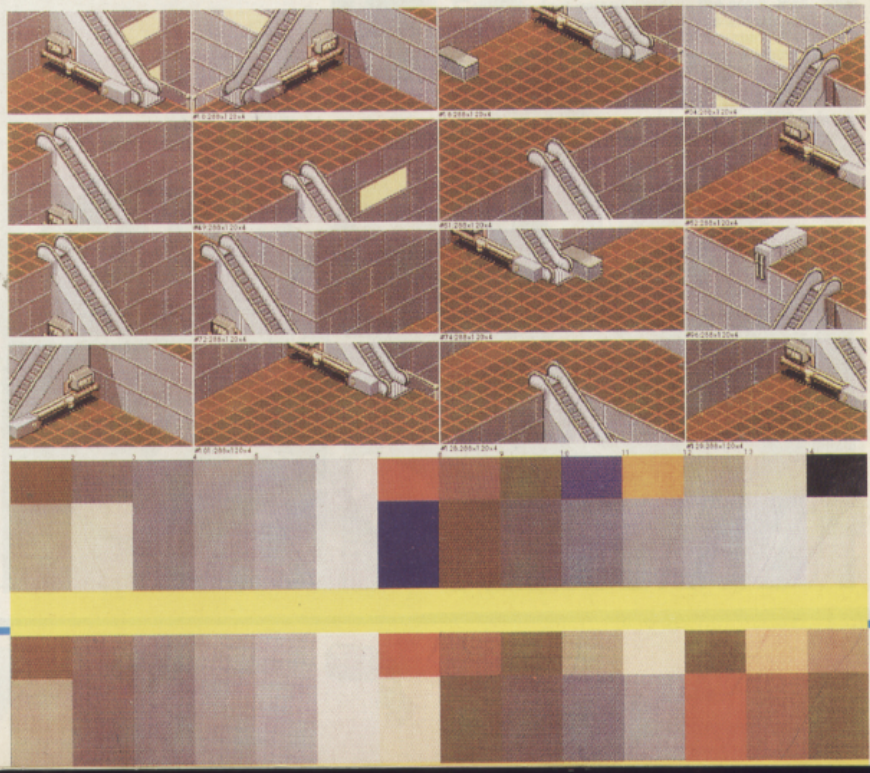
Mark's graphics are produced on a PC – but using Atari's own specially written utility: RAD (Rendering and Animation Design). "It's basically a standard paint tool with some animation facilities. I design and draw on the PC before uploading everything to the VAX to be compressed."

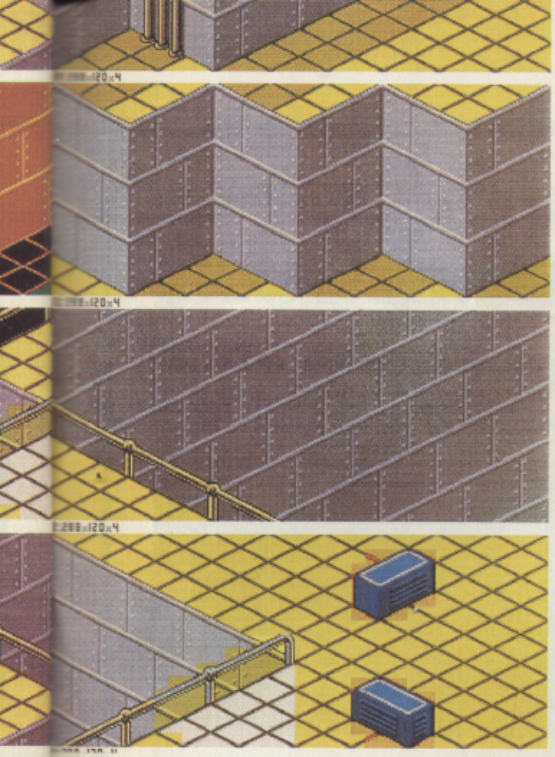
An Atari game takes, on average, around a year to produce – but then an average can come from two extremes, which is certainly in Mark's case – Escape took over two years to put together, whereas Klax was written in just four months!

Mark feels that game design is the most difficult and time-consuming, and yet most rewarding task: "With an arcade game you have to be very careful with the design. What you're trying to do is create something that people will want to play and keep playing. If you go to see a movie, you pay your six dollars and go in – if you decide halfway through that you don't like it, there's not a lot you can do about it as you've already paid to see it. If you buy a piece of software, you pay your 30 dollars then take

Designing all of Escape's 25 robot factories would have taken a lifetime if built from scratch every time, so Mark developed a much more convenient technique: he designed and drew a set of 226 unique playfield tiles – floor sections, Electro Stairs and so on – and then pieced them together like a Lego model to create a complete level. "Again we were constricted by the graphical limitations that the hardware set us, so the levels had to be built piece by piece in this way," says Mark.

The similarity between the Klax hand symbol and Mr Spock's Vulcan "Live Long And Prosper" gesture did not go unnoticed at Atari – in fact Mark keeps this poster above his desk with the caption: "Sorry Spock – close but no cigar!"





The playfield tiles that make up Escape's robot factories are left bare until a level is completed – it's only then that the supply lockers and aliens are dropped into the correct positions.

Dave Akers and Mark Pierce hard at work – the terminal that the game is actually written on is on the left (which is hooked up to the VAX in another room). On the shelf above sits the Processor Emulator which drives the prototype development hardware (where the game is actually tested) on the right.

it home, and again, if you don't like it, it's too late – you've already paid. But with an arcade game you only have to put in a quarter, and if you decide in your first game 'Urgh, this sucks', you can leave it and you've only spent 25 cents."

So if an arcade game is to recoup its investment, it's got to hook people from the very beginning and hold on tight. "You have to keep the task simple, so that the potential player will look it and say 'I can do that', while graphically it has to look sexy and inviting. That's really all you need to get somebody playing, but keeping them playing is the hard part. It's vital that you get the level of difficulty right – if a game's too tough, the player will give up, and if it's too easy you could have one person playing all day on just one quarter. The ideal level of difficulty is one that makes a quarter last about a minute and a half."

But unlike appearances, the level of difficulty is a much more demanding deception, as arcade players vary greatly in their levels of skill and patience. So before a game is released it's played extensively by the teams at Atari and then put on 'field test', where a few prototype machines and placed in arcades around the country and the reaction to them is graded.

"You can normally tell at the very start if a coin-op's going to sell – we always keep one test machine running in the lab, and if it's rarely played by the people here, it's probably not going to do well in the arcades either. Fortunately Klax, which has just been released, has always got a queue of people waiting to play it here, so we have a pretty good feeling about it!"

Only when a machine goes on field test can the public's response be gauged, so naturally Atari makes the best use it can of the time that the machine's 'out on trial'. The prototype machines used are equipped with special video recorders that videotape the games played on it. When the machines are recalled the tape is played back so that the team can see if players are exploiting any potentially disastrous bugs or unexpected design flaws and iron them out before the machines go on release. In addition, a computer printout provides pages of statistics that are dissected to find out just how good people are at playing the game.

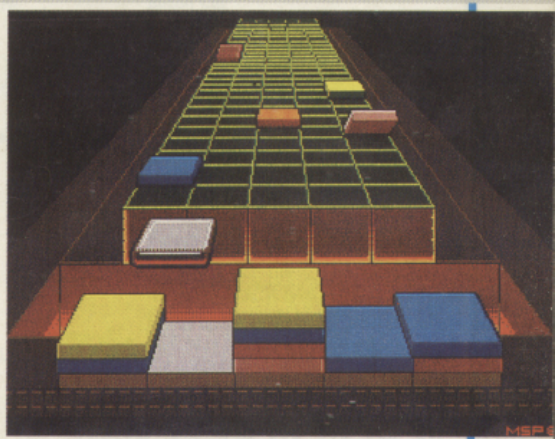
But at the end of the day, all that counts is the amount of money a machine takes – or 'coindrops' as Mark refers to them. "A machine has to make money within its first six weeks or it's not going to be successful. If an arcade owner orders a few machines, and they don't start making money quickly, he won't order any more – and he could well tell his arcade owner friends who won't order any at all."

So just how 'big' does a coin-op have to be to be classified as a success? "These days, anything that sells over 10,000 units is fantastic," Mark reveals. "Although back in the early days of the industry, machines could be expected to do a lot more than that. **Tempest**, for example, took over 30,000 orders in its first DAY on release! Williams' **Defender** has sold over 50,000, and **Ms PacMan** 123,000!"

So why the slump? "I think because when this

Between the bouts of hostage-rescuing in Escape, Jake and Duke indulge in a little high-speed maze racing in state-of-the-art Cybersleds. The comic-book feel is ever-present, as you can see in the animation frames for this section – the Cybersled bends like rubber when it hits a wall, squashing the driver, while Jake and Duke turn round in their seats to pilot the ship in reverse!

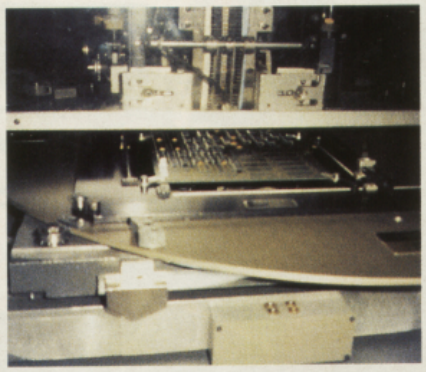
The hostages in Escape need just as many animation frames as anything else – if not more, due to the variety of actions they perform. At first they are hard at work (but not at their machinery, as this is added later as a separate sprite) as in frames 20 to 24, or kept in cyrogenic suspension (frame 61). If they are shot they get a bit frazzled (frame 99), but if touched they are beamed onto the escape shuttle (frames 84 to 86). They even go into Zombie mode, with grey skin and glowing yellow eyes!



As part of his 'Initiation Packet', Mark drew up this static picture to provide a rough idea of how Klax would work. And while the finished game looks a lot different (the tiles and playfield are only half the size), Mark actually prefers his original version: "When we actually came to write Klax, we had to scale down the graphics so that a two-player mode would work. This original version, which we had running in the office for about two months, has much larger tiles, which I prefer, and is a much purer game. It's more... tactile."

Arcade machines are manufactured piece by piece, and the components stored here before they are assembled and shipped out to arcades worldwide. Here, a thousand or so Klax control panels wait to be fixed to their cabinets.

Coin-ops coin-ops everywhere, but not a game to play. Atari's warehouse is currently packed out with hundreds of empty Klax cabinets, waiting to be stuffed with electronics.



This is where it all happens – at the Auto Insertion machines. Blank circuit boards are fed into the machine at rapid-fire speed, and the chips are stuck down onto them mechanically in a computer-driven order – literally seconds later, and a finished Klax board is ready to go!

After being manufactured in the Auto Insertion machines, the finished Klax boards hang around, piled on top of each other, waiting to be stuffed into their cabinets and shipped out.

business first started, we were dealing with a brand new technology, so there was a lot of excitement and a certain amount of novelty value. And also at the time, the people who played arcade games were a lot older – around 18 to 25, and so they had more money to spend than the average 14 year-old arcade player of today. Now the big novelty is gone, but I think at least the business is much more sane now. And there's still the occasional massive hit – Gauntlet is probably one of the biggest sellers that Atari has ever had."

Mark admits to being a great fan of the classic coin-ops of yesteryear. Defender, Tempest and **Galaga** rank amongst his favourites, but what does he think of the machines commonly found in today's arcades? "Most of the games over here are either horizontally-scrolling blasters or sideways-scrolling combat games, which I think is a shame. I think that while they're not at all original, they'll always be a market for them, so the companies will just keep on making them. It's like rock 'n' roll – most of the popular music in the charts today isn't too good, but they'll keep cranking it out because that's what in demand."

"I'm not sure about the **Operation Thunderbolt**-style gun games. I don't believe that playing those games is going to turn anyone into a killer or anything like that, but even so I don't think it's a good idea to make people feel comfortable about the idea of having a gun in your hand and shooting things."

At home, Mark's recently been up to his elbows in **SimCity**. "I like it – you get a certain kind of satisfaction out of playing it. It's kind of like tending a garden."

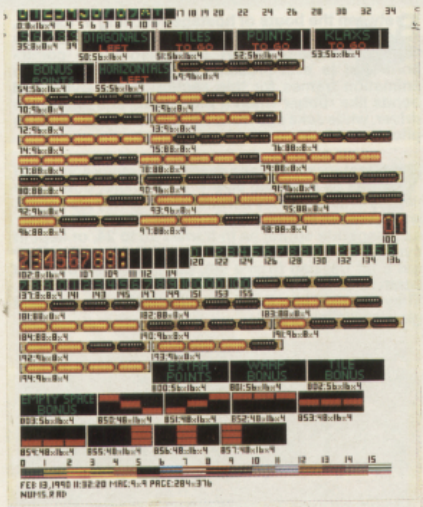
And the future? What kind of technology is going to be eating coins in years to come? "I'm not sure, but I do have a few ideas about the kind of thing I'd like to see. I'd like to expand what's playable in the arcades by moving away from shoot 'em ups and the like and do something else. One idea that might work would be an RPG coin-op – each player would buy a card that'd be inserted into the machine to start the game. That card would have the player's character stored on it – all the information about strengths, skills, objects carried – and the machine would read from and write to the card accordingly. With that system you could carry your character around in your back pocket and carry on your game whenever you see a machine."

Sadly, we aren't likely to see anything like that for a while yet, and for the moment, Mark prefers to look more to the immediate future. "Klax has just started to ship, and from what we've heard so far, it's already doing well . One machine in Manhattan is taking 400 dollars a week! I don't want to jinx anything by saying that Klax is going to be as big as Tetris, but I certainly hope that it will."

So what's next? "I'm really not sure. After Klax I think I'd like to do a bit more of an action game." Beyond that, Mark doesn't really know – but it's a sure-fire bet it's worth waiting for.

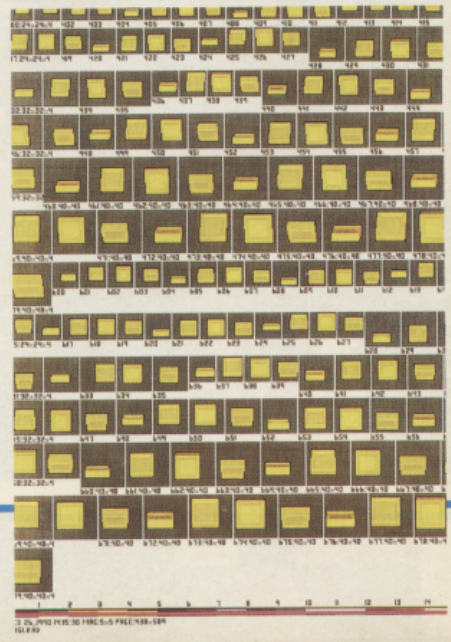
Even if he spends two years writing it.

More Escape sprites, this time it's the secondary graphics: power-up gems, the supply lockers, score displays and so on.



Klax's complex scoring system and the way in which the computer keeps track of everything is shown on screen in as simple a format as possible. Even for something as straightforward as this, a host of graphics have to be drawn up – everything from the score counter to the displays on the drop meter.

Four frames of animation are needed to make a Klax tile roll over once, and to get it from the back to the front of the table, it has to go through 20 increases in size. To make matters worse, the tiles have to be drawn from three angles, to allow them to move realistically down any part of the table. Mark had to put together a staggering 143 tile animation frames (all of which are seen here) to make the animation work.



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THE EIGHTIES. A DECADE PART FOUR

I-M

Last month Gary Penn got cut off mid-letter. So, here's all of 'I' again, plus 'J' and some more letters besides. Maybe this will be all over by the next issue...

IMAGINE. What a slick outfit. See the Psygnosis Work In Progress on page 27 of the last issue for further details. Just for the record, the company that was 'The Name Of The Game' released some good (and not so good) gear, including Arcadia (its Galaxians-inspired debut), Zzzoom (what great fun it was shooting the good guys and watching them explode in a blaze of strawberry jam), Pedro (ho hum garden fun), Catcha Snatcha, Wacky Waiters (take plates back and forth across the screen via the lifts – limited but playable), Schizoids, Ah Diddums (toys toys toys – and a neat tune on the C64 version), Molar Maul (an exercise in tooth-brushing!), Frantic (it wasn't really), Stonkers (one of the first attempts at an accessible wargame), Cosmic Cruiser (mediocre shoot 'em up with odd music on the '64), and Jumping Jack (AKA Leggit on the Atari – both versions looked crap, but it was choice fun jumping up and down the screen through gaps in platforms).

INCENTIVE. 'Yippee!' The first ever coherent Spectrum speech came with this company's debut – the novel maze game Splat!, starring Zippy, a 'cross' who was boss. Fun puzzle action followed in the form of Paul Shirley's Confuzion, and with the Graphic Adventure Creator under its belt, Incentive went on to produce a series of 'real world' adventures utilising a technique known as Freescape (TM). After a brief flirt at MicroProse, Incentive is now affiliated to Domark (see Castle Master review on page 85).

INFOCOM. The American software publisher has an impressive catalogue of successes. Its disk-based interactive fiction is unsurpassed for atmosphere and content. In its time Infocom's been responsible for some excellent original stories – detective 'novels', science fiction, Role Playing, humour, romance, and more frequently fantasy. Perhaps the Zork Trilogy is the most famous of all its wares.

INTERCEPTOR. Started life producing (very) poor men's versions of (then) current arcade faves, like Donkey Kong, PacMan and the like. Went on to do good with a run of more impressive but by no means less derivative products, including the text-with-pictures adventure Heroes Of Karn, the PacMan-ish Guzzler, Tales Of The Arabian Knights (complete with 'speech': "Welkum Too Th' Tayles Ov Theee Uraybiun Nihtes"), the off-beat Wheelin' Wally (a floating hamburger on a unicycle with no saddle!), and Trolly Wally (in which the burger-like Wally goes shopping in a multi-directional scrolling platform-laden supermarket to the sound of 'Popcorn'). Interceptor then spawned two 'sub-labels': Players and Pandora, on which the excellent Into The Eagles Nest, Joe Blade and Galdregon's Domain were released. The company is now responsible for manufacturing everything from satellite dishes to compact disc cases.

INTERDISC. This software publisher didn't last long – shame, really, as it came up with some very original product. Interdisc originally released Steve Bak's Hercules and an interesting laser disc-style arcade adventure called Black Knight, which saw you jumping holes on a two-legged horse, leaping crevasses and slicing snakes with your sword!

IREM. The Japanese coin-op manufacturer's list of releases isn't particularly lengthy, and it's only ever really had one memorable hit – and that's R-Type. Other less notable but fun fare includes Lode Runner (converted from Broderbund's original computer game), Mr Heli, Vigilante, and Ninja Spirit (conversions imminent from Activision).

JARVIS, EUGENE. Not to be confused with the aforementioned Mr Evans. This Eugene is the tops. He was coin-op manufacturer Williams' best boy, and his portfoilio is arguably the strongest ever seen... Defender, Joust and Joust II, Robotron, Sinistar, and StarGate, and he also had a hand in Narc (see News in the last issue for conversion details) and numerous Pinball machines. Shame he's not knocking 'em out like he used to, really.

JAWX. A French programmer with a very European sense of humour. He had two budget releases through Silverbird – both were limited but a laugh and a half of full cream fun nonetheless. Chickin' Chase saw you controlling a cock with the objective of 'serving' hens without falling asleep through exhaustion. Each 'score' was rewarded with a triumphant jingle and a little heart appeared to let you know that they chickens really did love each other. Raging Beast on the other hand had you bullfighting a fat sod of a bull who sat on you when you failed to do the job properly. Come back, Jacques!

J K GREYE. Worth a mention for releasing 3D Monster Maze – an atmospheric maze game which saw you running around a maze trying to avoid large dinosaurs. And it was on the ZX81!

JONES, DAVID. A fun fellow and programmer of the rather good arcade adventures – namely the Magic Knight Trilogy (featuring Windowmation). But where are you now, David?

KONAMI. One of the more established arcade companies. Amongst the Japanese giant's many successes are Hypersports (one of the first button-busting track and field multi-event affairs, which was successfully converted to 8-bit by Ocean), Mikey (a novel runaround with the hero attempting to snog his female school-chums while avoiding all manner of authoritarians), Green Beret (exciting scrolling shoot 'n' stab action, also successfully converted to 8-bit by Ocean), Ping Pong (great version of the popular indoor sport), WEC Le Mans (reasonable racing game which was going to be converted to 16-bit by Ocean but never made it out of the pits), The Teenage Mutant Ninja Turtles (or Hero Turtles as they have to be known over here), and more recently Aliens (see Arcades on page 94).

K TEL. Another software offspring from a record company parent. Didn't last long,

which wasn't surprising given the quality of its releases – like It's Only Rock 'n' Roll, City Attack, and Oddysey. The company sort of resurfaced as Front Runner, from which came Storm Warrior (a reasonable offbeat shoot 'em up from the author of some of K Tel's earlier works) and Interview (avoid the obstacles in the street and get to the interview on time – all very well but it took years to load).

LEGEND. And wasn't it just – well, maybe in its own lunchtime. Following a blaze of hype, the company's debut eventually appeared and for some bizarre reason was proclaimed as the best thing ever. The arcade adventure Valhalla boasted a realistic environment and little silhouetted characters, each supposedly leading its own life. Actually, it wasn't too bad. Unlike Legend's even more over-hyped second release – The Great Space Race. What a lot of rot. Before its demise, Legend was working on a sequel to The Great Space Race.

LEVEL 9. Produced some exceptional single-load 8-bit text-only adventurers, like Snowball. Unfortunately, only a small portion of the software-buying public actually appreciate text-only adventures, and so the team had to start including simplistic graphics in all its wares. This meant that the vivid imaginations of all those adventurers were effectively out of a job, as Level 9's interpretations of its descriptions weren't quite the same. Since then, the team's .

LLAMASOFT. How Jeff Minter can see what he's doing with all that long hair is anyone's guess. But, what the heck. What he does, he does very well, so it obviously doesn't put him off. The llama influence was almost non-existence in the earlier days, with software for the VIC 20 and Spectrum like Traxx, Ratman!, Defenda!, and Gridrunner (a simplistic shoot 'em up which attracted a great deal of attention – mainly because this playable gem was crammed into 3.5K!). Matrix, the sequel to Gridrunner, was even better. The exceptional shoot 'em ups Laser Zone and HellGate are typical of Jeff's continual desire to innovate. Laser Zone saw you controlling two laser bases at once, while HellGate gave you four! Both featured some of the most stunning sonics ever heard (and still unsurpassed even today). From another original vein came Hovver Bovver, a lawn-mowing simulation with a difference – it was fun and funny. Then came the game which really got Jeff noticed: Revenge Of The Mutant Camels, the sequel to Attack Of The Mutant Camels which saw the player attempting to destroy giant spitting camels! Revenge was a wacky wade through 32 waves of weird aliens, and seemed to prove very popular. Ancipital on the other hand was Jeff's arcade-style answer to the adventure – 100 'rooms' of devilish alien attack patterns which had to be 'solved'. It's a classic (why no beefed-up 16-bit versions?). Jeff was talking about doing a 3D version inside spherical rooms, but dropped the idea as it would eat up too much memory. Other impressive items include Battlyx and Iridis Alpha (through Ariolasoft and Hewson respectively), the latter memorable for its very clever split screen mirrored playfields. And who could forget the very alternative Psychedelia and Colourspace light-synth shows.

Oh yes, and Mama Llama.

LOCK-ON. Whatever happened to Activision's home computer conversions of the Tatsumi arcade shoot 'em up with wicked Sega-style 3D graphics. It appeared on the PC in the States courtesy of Data East, but Activision obviously decided to forget about it over here...

LUCASFILM GAMES. Film director George Lucas' software appendage has been responsible for some unique releases. The future sport Ballblazer (which was originally written for the Atari 7800 console) is delightfully simple and fun with a capital F-U-N. After this, the branch of mathematics known as fractals made a regular appearance. Fractals are great for producing realistic looking clouds, trees and mountains... like those found in the shoot 'em ups Rescue On Fractalus and Koronis Rift (which also featured an element of puzzle-solving for good measure). Fractals also make nice caves, as demonstrated rather well by The Eidolon, an HG Wellian underground 'adventure' with plenty of weird creatures, dragons and shooting. A computer version of the film Labyrinth followed, and then, moving completely away from the pure arcade-style games, out came the first interactive arcade story: Maniac Mansion. It's not bad at all, and the system's steadily improved with each new release – like the very zany Zak McKracken And The Alien Mindbenders and the brilliant Indiana Jones And The Last Crusade: The Graphic Adventure. Ever eager to diversify, Lucasfilm's even found the time to release a couple of flight 'n' fight simulations, namely Battlehawks and more recently Battle Of Britain. Coming soon is Loom, an impressive-looking fantasy adventure full of magic and puzzles and written by Brian Moriarty of ex-Infocom fame.

MACLEAN, ARCHER. Even though he's only ever written a couple of games, me old Archer's got an ego the size of someone who's written ten times as many. Maybe it's because what he's done is so damn fine... His debut was the StarGate-alike shoot 'em up Dropzone (which may well yet find its way onto 16-bit). Archer's other game is the fightin' and fumpin' favourite IK – and the special, improved IK+ (both for System 3). Action Mac's currently working on a 3D Snooker, which he reckons knocks Nik Pelling's 3D Pool for six. Crumbs.

MACMILLAN. This was the book publisher that launched sailing, running and driving simulations before forming the Piranha software publishing label. The best thing it ever did was release Don Priestley's Trapdoor (based on the children's television series), although there were a few others... like, erm, Rogue Trooper (based on the exploits of the 2000AD character), and Gunboat.

MARTECH. Gone, but not forgotten. This was one of the first companies to produce very 'different' licensed product. We had Eddie Kidd's Jump Challenge, Brian Jacks Superstar Challenge and Geoff Capes Strongman Challenge. Then there was Zoids, starring those DIY toys for the boys, and some comicbook character licences in the form of Nemesis The Warlock and Slaine – both from 2000AD. Of the company's original games, the most memorable are the excellent judo simulation Uchi Mata and the shoot 'em ups Crazy Comets and Mega Apocalypse – both inspired by an obscure coin-op known as Mad Planets.

MASTERTRONIC. Accept no imitations – this is the original budget label. Its first four releases were dire and included that unforgettable 'classic' Bionic Granny. A few best-selling misses later, Mastertronic got into trouble with its platform game Chiller, and it had to remove the Thriller theme tune. One of very few jewels in Mastertronic's crown is the Magic Knight Trilogy (see JONES, DAVID) and Flash Gordon (one of the company's few licences). Funnily enough, the Darling brothers used to write for Mastertronic (including the aforementioned Chiller, and Zyto's Brain, or Mind Control, in which you jump wheelchair-bound patients and get shrunk to enter the maze-like brain!). Now of course the brothers are competitors in the form of Codemasters. Notable Mastertronic non-event horizons include the Arcadia arcade project, Mastervision videos and Mastersound records.

Sorry to cut you off in mid-M, but that's all we've got time for this month. The rest of M and its friends will be back in the next issue, so don't go away – y'hear?

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